ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

TOM BEVILL, Alabama, *Chairman*

LINDY (MRS. HALE) BOGGS, Louisiana
BILL CHAPPELL, Jr., Florida
VIC FAZIO, California
WES WATKINS, Oklahoma
BILL BONER, Tennessee

JOHN T. MYERS, Indiana
VIRGINIA SMITH, Nebraska
ELDON RUDD, Arizona

HUNTER L. SPILLAN, GEORGE A. URIAN, DONALD P. SMITH, and AARON D. EDMONDSON,
Staff Assistants

PART 3

Page
Appalachian Regional Commission 1
Tennessee Valley Authority 957
Testimony of the Secretary of the Interior 145
Bureau of Reclamation 147

Printed for the use of the Committee on Appropriations

58-480 O - 86 - 1

H181-19

COMMITTEE ON APPROPRIATIONS

JAMIE L. WHITTEN, Mississippi, *Chairman*

EDWARD P. BOLAND, Massachusetts
WILLIAM H. NATCHER, Kentucky
NEAL SMITH, Iowa
JOSEPH P. ADDABBO, New York
SIDNEY R. YATES, Illinois
DAVID R. OBEY, Wisconsin
EDWARD R. ROYBAL, California
LOUIS STOKES, Ohio
TOM BEVILL, Alabama
BILL CHAPPELL, Jr., Florida
BILL ALEXANDER, Arkansas
JOHN P. MURTHA, Pennsylvania
BOB TRAXLER, Michigan
JOSEPH D. EARLY, Massachusetts
CHARLES WILSON, Texas
LINDY (MRS. HALE) BOGGS, Louisiana
NORMAN D. DICKS, Washington
MATTHEW F. McHUGH, New York
WILLIAM LEHMAN, Florida
MARTIN OLAV SABO, Minnesota
JULIAN C. DIXON, California
VIC FAZIO, California
W. G. (BILL) HEFNER, North Carolina
LES AuCOIN, Oregon
DANIEL K. AKAKA, Hawaii
WES WATKINS, Oklahoma
WILLIAM H. GRAY III, Pennsylvania
BERNARD J. DWYER, New Jersey
BILL BONER, Tennessee
STENY H. HOYER, Maryland
BOB CARR, Michigan
ROBERT J. MRAZEK, New York
RICHARD J. DURBIN, Illinois
RONALD D. COLEMAN, Texas

SILVIO O. CONTE, Massachusetts
JOSEPH M. McDADE, Pennsylvania
JOHN T. MYERS, Indiana
CLARENCE E. MILLER, Ohio
LAWRENCE COUGHLIN, Pennsylvania
C. W. BILL YOUNG, Florida
JACK F. KEMP, New York
RALPH REGULA, Ohio
GEORGE M. O'BRIEN, Illinois
VIRGINIA SMITH, Nebraska
ELDON RUDD, Arizona
CARL D. PURSELL, Michigan
MICKEY EDWARDS, Oklahoma
BOB LIVINGSTON, Louisiana
BILL GREEN, New York
TOM LOEFFLER, Texas
JERRY LEWIS, California
JOHN EDWARD PORTER, Illinois
HAROLD ROGERS, Kentucky
JOE SKEEN, New Mexico
FRANK R. WOLF, Virginia
BILL LOWERY, California

FREDERICK G. MOHRMAN, *Clerk and Staff Director*

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

THURSDAY FEBRUARY 27, 1986.

APPALACHIAN REGIONAL COMMISSION

WITNESSES

GOV. MARTHA LAYNE COLLINS OF KENTUCKY, STATES' COCHAIRMAN
WINIFRED A. PIZZANO, FEDERAL COCHAIRMAN
FRANCIS E. MORAVITZ, EXECUTIVE DIRECTOR
DAVID E. MEUSER, BUDGET OFFICER
BRINLEY J. LEWIS, BUDGET ADVISOR

Mr. BEVILL. The committee will come to order.

We are happy to have the two Co-Chairpersons here, both leaders of this Nation, to testify before our committee, and we welcome both of you. Ms. Pizzano, the Chair is going to recognize you first to present the Administration's position and then, Governor Collins, we will ask you to present the Governors' position.

Ms. PIZZANO. Thank you very much.

Good morning, Mr. Chairman, Mr. Myers, distinguished members of the committee. Thank you for the opportunity to again appear before you. Glad to see you.

My distinguished fellow Co-Chairman, Governor Martha Layne Collins of Kentucky, and I bring you two separate proposals concerning the future of the Appalachian Regional Commission.

The Administration is proposing termination of the Commission, both its highway and non-highway programs, at the end of fiscal year 1986. Accordingly, no funds for fiscal year 1987 have been included in the President's budget.

The Administration also proposes to rescind $81 million of the $122.2 million appropriation for fiscal year 1986, including $59.4 million from highways, and another $21.6 million from area development programs.

In addition to the rescission, the Administration's budget identifies an additional $5,255,000 that would be sequestered under the provisions of Gramm-Rudman. I have appended a table showing by program the amounts that would remain available given various actions by Congress.

Should the President's recommendation to terminate the Commission this year be accepted, there would be $10 million in deferred funds available over three years to administer the closeout of projects and activities. The Commission would be responsible for initial program closeout actions and for an orderly transition to the

Federal Highway Administration and the Department of Commerce through March 31, 1987. Thereafter those agencies would be responsible for closeout.

Mr. Chairman, I continue to support the Administration's proposal to terminate the Appalachia Regional Commission for the following reasons. First, I believe that the ARC has, in large measure, accomplished its original mission. The original goal was to help create in Appalachia a capacity to compete successfully with the rest of the country. In so doing, it was hoped that Federal investment in development activities would stem the region's drag on the overall American economy and improve the quality of life for the region's inhabitants.

No one in the Administration would suggest that poverty has been completely eliminated in Appalachia; any more than we would suggest it has been completely eliminated anywhere else in the United States. But to remember the Appalachia of 1965 is to appreciate the Appalachia of 1986. Today residents are far healthier, better educated, more highly skilled, and wealthier than they were when the ARC began.

Second, I believe that the most serious economic problems remaining in the region are ones unlikely to be solved by ARC resources and processes—ones designed 20 years ago to deal with different problems in a wholly different economic climate. For example, areas that depend on manufacturing have been deeply shaken by the dwindling role of manufacturing as an employer in the U.S. economy, a fact which ARC can do little to change. Appalachia, I believe, would be better served by programs that encourage small business development, increase leveraging of investment capital, education initiatives by States and local communities, and the development of exports.

Third, nothing has been, or will continue to be, more beneficial to the region than the continued economic recovery that has been occurring over the last few years. Multi-billion dollar deficits threaten economic recovery and its expansion to all of the Appalachian region. There is a need to cut substantial amounts of Federal spending in order to help bring deficits under control, a need which is being addressed through the rescission and Gramm-Rudman processes and, in the case of ARC, the President's recommendation for termination.

Fourth among my reasons for requesting zero funding for ARC is one that every American understands: fundamental fairness. People may disagree about which programs to cut, but they all agree that the necessary "belt-tightening" should be fair, and that any sacrifice should be shared.

If a community falls anywhere within the legislatively defined geographic boundaries of the ARC, no matter how healthy the local economy, they are eligible for ARC grants. No other communities, no matter how distressed, are eligible. And these narrowly targeted funds are provided by all taxpayers. Though I accept that 20 years ago some measure of financial sacrifice from all citizens was appropriate to bring Appalachia into parity with the rest of the nation, I do not believe that such a case can now be made in any valid or equitable way without changing eligibility.

I would now like to briefly review the progress we have made to date regarding the finish-up program activities.

Under the area development program, we have directed a significant share of ARC area development resources to the most severely distressed counties in the region. As you know, Mr. Chairman, these counties qualified for relatively few ARC dollars over the years because those dollars were directed by law to areas with the greatest growth opportunities.

These 76 counties have been targeted under the finish-up program receiving nearly $46 million of ARC assistance in the last three years, representing approximately 27 percent of the area development funds available. This amounts to nearly $30 million for 134 projects to improve water, sewer and waste treatment facilities, which has been a basic need in these areas. Other aid included $6.9 million for 43 job-creating type projects and some $9 million for various health, housing and access road projects.

I want to report that the narrow focus of our other area development funds under our Jobs and Private Investment Program has resulted in more effective use of our dollars. During 1983 to 1985, the 267 infrastructure projects that ARC funded with a total of about $54 million attracted almost $907 million in private investments and when completed will create approximately 26,000 new jobs.

Over the three-year finish-up program completed in 1985 we funded basic primary care projects which are reaching 195,000 people annually in 41 counties, providing care to some 27,000 maternity cases, construction of 13 primary care sites and major renovation on nine others and placement of approximately 350 physicians through six State recruitment programs. This program has been accomplished using almost $11.7 million of ARC funds involving 122 projects. We are proud of the accomplishments of the ARC health program which has been a leader of innovative programs to provide health care in rural areas through primary care clinics, strengthening hospitals and physician recruitment.

Finally, with regard to our highway program, during the years 1983 through 1985, $303.7 million was obligated with $289.8 million on the corridor highways and another $13.9 million on access roads. During this period, 201 miles of corridor highways have been completed, and we placed under construction 118 miles, acquired right-of-way for an additional 91 miles and funded engineering design for still another 116 miles, and placed 94 miles of access roads under construction.

Mr. Chairman, I fully support the Administration's position. However, I am well aware that the Congress has not agreed with the President's budget in the past. I wish to assure the committee that in the event that Congress again appropriates funds for the Commission, I will continue to assure that those funds are expended as prudently and effectively as possible.

Mr. Chairman, as you are aware, because you were there when we announced it last year, the Commission has focussed on the school dropout problem. We have a visual report for you at this time.

We have made some headway in this area. After the tape is finished, I will be happy to answer any questions you may ask me.

[The statement of Ms. Pizzano appears at the end of this hearing:]

Mr. BEVILL. Very good.

Mr. MYERS. A picture is worth a thousand words.

[Viewing of film.]

Mr. BEVILL. Very good.

Next we will recognize you, Governor Collins. You may proceed as you wish.

Governor COLLINS. Thank you, Mr. Chairman, committee members.

I would like to say I am honored to have the opportunity to address you today. I hope that you will allow me to submit for the record a statement made by Governor Wallace and also a complete statement of mine. I am going to hit some high spots but I would like my complete prepared text to be submitted for the record.

Mr. BEVILL. Without objection, it is so ordered.

Governor COLLINS. On behalf of all the Appalachia Governors, I would like to express our profound appreciation for your support of the ARC. We are aware that without your unyielding support in recent years there would no longer be an Appalachian Regional Commission and without ARC, Appalachian achievement would be drastically reduced.

Progress in Appalachia between 1965 and 1980 was dramatic and heartening. In fact, Ms. Pizzano has given some tremendous figures and a film and exactly what I think are the reasons that ARC should continue.

Appalachia has changed. This is a good program and we need to continue it. Poverty rates during the period from 1965 to 1980 were reduced by more than 50 percent, and income was rising toward the national average.

Out migration was reversed in the 1970s while measures of health care, educational attainment, housing and employment were dramatically documenting the closure of the gaps between Appalachia and the rest of the Nation. But perhaps the most important change of all was the re-birth of hope in America, in Appalachia, hope for our children and hope for the future.

In 1964, the Appalachian Commission appointed by President Kennedy wrote of, and I am quoting, "a child in a remote valley, his horizon of opportunity limited to the enclosing hills and the despair of his father who idled by forces beyond his control and seeing no prospects of future employment must live month in and month out with the vision of that child repeating his own history".

That had changed considerably by 1980. Although Appalachia still lagged behind the Nation, young people were finding more opportunities in the Region. If they chose to leave Appalachia they were better prepared for the world beyond the mountains.

Since 1980, Appalachia progress has been interrupted by several factors beyond our control. Those include the recession of the early 1980s, the world-wide shift in trade patterns and the changing structure of the Federal budget. Progress has been further slowed by the deregulation of air, rail and truck transportation and the changing needs of the world force. The combined impact of those forces on the Appalachian economy was devastating. Appalachian unemployment rates soared more than one-third above the near record national figures.

In some counties unemployment rose to two or three times the national level. State and local tax revenues were decimated. Fortunately, the economic base that had been built since 1965, the highways, the community facilities, the housing, the healthier, better educated people were there as a development base to prevent an economic free fall. We have used that base along with a great deal of support from ARC to adapt to the new economic realities.

Despite the setbacks, we have made new strides in improving education and economic development. Many of our efforts for education have centered on dropout prevention. Under-education has been one of the most serious problems facing the people of Appalachia and in Kentucky we are using, as we stated in the film, much of our ARC support to combat that pervasive problem. We have also emphasized economic development. We have tried to maintain our existing mining, manufacturing and farming industries and at the same time we have worked to attract new kinds of jobs to the region and to prepare our people for the more technical jobs of tomorrow.

In all of the Appalachian States we are stretching our resources to the utmost. We want to move into a new age when our States will be on an economic parity with the Nation. We think that we have earned your help a little longer.

You have before you a copy of a bipartisan 1987 ARC budget. It calls for the minimum help which 13 Appalachian Governors think we need. It will move us toward the dawn of that new age for Appalachia. In 1981, the Appalachian Governors, in answer to the congressional request initiated by this committee, submitted an ARC finish-up program and, as you know, it was prepared in a spirit of sacrifice. We were willing to make our share of contributions in a time of deep cuts in taxes and Government programs. It was designed to fund a limited program needed to finish up the work of ARC in an orderly fashion, in an orderly manner.

Both the highway and area development programs were cut back sharply below previous levels. The scope was narrowed to meet only the most critical needs. Our finish-up program included commitment to completion dates and limits on Federal funding.

It included firm commitments by the Appalachian States. Unfortunately, however, Federal dollars appropriated have been less than half those needed to keep the finish-up program on schedule. Despite limited funding, we were able to complete the health component on schedule and we hope that you share our pride in finally extending basic health care throughout Appalachia.

Beyond the health program, however, though, much needs to be done, much remains to be done in Appalachia and in this region. The budget I have submitted for the Appalachian Governors will enable us to continue the finish-up program at the levels we recommended in 1981. We are requesting nearly the same amounts we outlined in our 1986 request.

Our budget includes $234 million for the ARC highway program and access roads, $70 million for area development, $5 million for local development districts and technical assistance, $1.75 million as the Federal share of Commission expenses and $450,000 for the Office of the Federal Co-Chairman expenses.

Now, that totals $311.2 million, about the same amount requested last year. I want to put the request for the highway and access road fund into perspective by highlighting several facts. Our budget request is a relatively modest one.

In 1981, 1300 miles of the Appalachian development highway system were still unimproved. However, the Governors cut the miles in the finish-up program to 550. We asked for less than one-third of the Federal dollars needed to complete the entire system.

We also committed to completing an additional 181 miles of the system without ARC funds. Despite this pared down program, actual appropriations through 1986 enabled us to fund only two years of the highway finish-up program. We have documented for this committee and others the excellent development returns from the ARC investment in highways. The benefits can be counted in terms of new jobs and in lower costs for delivery of health and other services. Further documentation is included in the budget materials that I have submitted.

At our ARC meeting two days ago, the Appalachian Governors unanimously passed a resolution reaffirming our support of the Appalachian Development Highway System and our determination to complete the scaled-back system, and with your permission, I would like to insert that resolution for the record also.

Mr. **Bevill**. Without objection, so ordered.

[The information follows:]

APPALACHIAN REGIONAL COMMISSION

STATES' RESOLUTION NUMBER 580S

A RESOLUTION in Support of the Appalachian Development Highway System

Whereas, the Appalachian Development Highway System was designed by the Appalachian States using the unique shared decision-making process pioneered through the Appalachian Regional Commission with the clear recognition that overcoming Appalachia's isolation was a prerequisite to effective development in the Region; and

Whereas, the Congress authorized the Appalachian Development Highway System, in concert with the Commission's Area Development Programs, to overcome that isolation and bring economic opportunities to the Region; and

Whereas, only 2,000 miles of the planned 3,041-mile System is now complete or under construction, with vital gaps and linkages remaining; and

Whereas, the high cost of construction in the mountainous terrain combined with the low level of annual Federal appropriations have seriously slowed progress in the Region; and

Whereas, failure to complete in a more timely fashion will severely limit the impact of the substantial investment already made, will be a significant blow to economic development efforts in the Region, and will create potentially hazardous traffic and safety problems in many parts of the Region.

Therefore, be it resolved by the Governors of the thirteen Appalachian States:

1. We reaffirm our belief in the critical importance of the Appalachian Development Highway System to the economic growth and quality of life of the Region.
2. We reaffirm our unswerving support for timely completion of the Appalachian Development Highway System and our commitment to use whatever resources are available to us to complete the System.

3. We recognize the need to seek options for long-term financing of the System to insure its timely completion.

4. We authorize the Appalachian Regional Commission States' Co-Chairman to appoint a committee of Governors to identify options and the necessary steps to obtain long-term financing of the System. The committee will consult with the other Appalachian Governors before pursuing any course of action, and in any event to report back to the Governors no later than June 1, 1986, on their progress.

ADOPTED BY THE APPALACHIAN STATES, WASHINGTON, DC, FEBRUARY 25, 1986.

Governor COLLINS. Now, the $70 million request for the ARC area development program is also relatively modest, but necessary, for our further progress. $54 million will go to the ARC jobs and private investment program. Those funds will be used to create or retain jobs and to encourage private sector investments.

$15.4 million will be used to help the 74 poorest counties in Appalachia meet their most critical needs, especially safe drinking water and waste disposal, things we take for granted.

$600,000 will be needed to pay Federal agencies for administering ARC projects and of the $5 million requested for local development districts and technical assistance, $4 million will go to the LDDs. The local development districts vary somewhat one to another and from State to State in terms of effectiveness, but in Kentucky they are invaluable partners in economic development and we must maintain the strength of these districts.

We in Appalachia are now recovering somewhat from the setbacks of the early 1980s. We are again bringing our unemployment rates down toward national levels. We are again moving toward the overall goals set for ARC more than two decades ago: an Appalachian economy on par with the rest of the Nation.

But as our experience in the early 1980s showed, the Appalachian economy is still fragile. We still have a lot of catching up to do.

We in Kentucky and I believe in most of Appalachia are doing more than ever at the State and local levels. We are stretching our economic development resources more effectively than ever before. We are going well beyond meeting our commitment to the ARC finish-up program. We urge the Congress and the Administration not to abandon the effort at this critical juncture.

Help us get on with the finish-up program. Help us to share pride in the completion of all ARC projects as we now share satisfaction in the completion of the health program.

Finally, I want to again express our appreciation to you, Mr. Chairman, for your understanding and support of our ARC work over the years. I want to thank the committee members for their attention and for their interest and I want to thank you specifically for your thoughtful letter of December the 19th, Mr. Chairman, extending your support of flexibility for ARC Governors in the traditional cooperative ARC process.

Appropriations Committee Chairman Jamie Whitten has often cited examples of national investments in one part of the Nation paying off in benefits to the entire Nation. We are demonstrating to the fullest measure that ARC is such an investment.

I said of Kentucky we are poised for progress and with your help we can make that true of all of Appalachia. Our executive Director Francis Moravitz is here with me and we would welcome any questions you have on the budget request I have submitted to you.

I thank you for your attention and for the opportunity to be here today.

Thank you, Mr. Chairman.

[The statement of Governor Collins appears at the end of this hearing:]

Mr. BEVILL. Very good statement.

Ms. Pizzano, what in your opinion is the economic condition of the ARC at this time and how does that compare with the rest of the Nation? You have covered some of that but I did want to give you an opportunity to expand on it.

Ms. PIZZANO. There are some things about the region that are different from the rest of the country, Mr. Chairman. For example, we are dominated by manufacturing and coal-related activities, and jobs are dropping off in those industries.

Some of them have not recovered as quickly from the recession as you might hope. Some of our industries are being challenged by overseas competitors, steel and related products, and textiles. I think that the rest of the Nation, maybe to a lesser degree, is struggling with some of those problems, but there are some differences in Appalachia.

Mr. BEVILL. You mentioned several accomplishments during the three years that you have been Co-chairman and it is a very outstanding record as to what has been accomplished while you have served as the Co-chairman. Of course, you couldn't mention everything because this covers so many different areas, particularly, education, health and employment, there would be no way to get an exact figure on just what has been accomplished during your three years. There have been many thousands of people in Appalachia area that have been taken off the welfare roles because they went to a vocational school, got an education as a result of ARC funding and instead of being on the welfare, they are on payrolls and they are paying taxes rather than taking tax money.

That is quite an accomplishment. One thing I recall, too,—in looking over the 20-year history of ARC—over 700 industrial parks have been made possible in the Appalachian area as a result of those Appalachia funds. If you tried to put it in numbers of how many jobs have been created by this program, would that be possible?

Ms. PIZZANO. Figuring that out is very difficult, Mr. Chairman. I think that the highways have probably impacted most. We conducted a survey back in 1981, which pointed out that approximately half a million new jobs were created along the highway corridor system alone up to that time.

Mr. BEVILL. Now, the States put up something like, as I recall, 10 cents on the dollar on interstate highways, but on these projects the ARC requires 20 cents on the dollar in some cases so now the States pay twice as much local funding going into these local highways as there are in the interstate highways; is that correct?

Ms. PIZZANO. Yes, Mr. Chairman.

Mr. BEVILL. Governor Collins, you mentioned the Governors' position. You have ably covered the Governors' position on this. Just to clear the record, on this, I would like to ask you if the statement you made is unanimous with the 13 Governors directly involved in this program and very supportive of this program?

Governor COLLINS. Yes, sir. I think it is very fair to say that the Governors gave their unanimous support, on the resolution I have submitted for the record with regard to the Appalachian highway system and the necessity for a timely completion date. They passed that resolution unanimously. It not only says we know how important it is to finish it up since, it is very important to our area, but they have also asked me to appoint a committee to study and, to look for options for other sources of funding and to try to help out every way we possible can to arrange timely completion.

I think surely everybody understands that the Governors would like to reach the goal where we didn't have these problems and there wouldn't be a real need for the ARC to such an extent. What I said earlier is that so much good has been done. It has been such a tremendous investment that it would be almost like pouring money down a hole if we don't finish up what we have begun.

I can see cuts. We have talked about that. We understand.

Governors have to have balanced budgets every time we submit one. We have to make the tough decisions and we have to say, we will do this now. We set our priorities. But the point is that when you have got so many good things going, it just seems so unrealistic to think that you would just walk off and not be able to complete it.

So with the investment that has been made in the health care, like I told you, and the great things in education that the film showed we can't walk off. That is just the beginning.

We are going to work to get some private funds to go into the drop out program. I know what we have done using ARC with regard to flooding in eastern Kentucky and in other States. It has been very, very important.

In Kentucky, we are very proud, of course, that Toyota chose Kentucky. The Toyota plant is to be located in the foot hills of the mountains of eastern Kentucky. With the roads that have been built connecting into Appalachian Kentucky and the others that we see in the future, it is a beginning of creating more jobs.

We understand the coal problems. We understand the unemployment and we understand all those things. We just need help for a little while longer. Let's set those goals and go after them and complete them because it is a good investment. It is a good return on your dollar. You didn't ask me that much, but I told you.

Mr. BEVILL. I am glad you expanded on that.

Governor COLLINS. Thank you, Mr. Chairman. I believe in it, you understand.

Mr. BEVILL. Yes. The bottom line is if it is not broken, don't fix it. Is that fair to say that?

Governor COLLINS. Yes, sir.

Mr. BEVILL. You mentioned the roads. Now, when you mentioned the roads, of course, you're talking about 80/20 local participation by the States, on Appalachian highways.

Governor COLLINS. There is no way the States can pick up the ARC 80 percent financing by themselves. If the States tried to do it, out of the regular Federal aid funds, it would take us about 50 years to complete what little there is left to be done, whereas if we could work together on this we can finish it up in a timely fashion.

It will help for economic development. We won't keep falling behind. We will be able to catch up more.

Mr. BEVILL. How many people are expected to be employed at the Toyota plant that locates in Kentucky because of the road improvements?

Governor COLLINS. There will be 3,000 in the plant itself. We know that, but with all of the other service companies that will be coming in, there is no limit to the kind of employment. Let me tell you what else that has done for us, not just jobs and the need for the roads, but we have had so many phone calls from people who want to get their GEDs, or General Education Diplomas.

We have had phone calls and letters and so much excitement from people saying our kids are going to stay in school. They see now why they need an education.

It has helped the drop out problem. It has helped people want to get their GED so it has been a tremendous shot in the arm with regard to education, to cultural things, to everything. You can't take just any one part of it.

Mr. BEVILL. You have been particularly outfront on education, I have noticed. So I think it is commendable what you have accomplished as the Governor of Kentucky. It is one for all of us to take note.

Governor COLLINS. Thank you. I think when we get our people in Appalachia educated, and we have provided the roads, and they are healthy, that they want to be self-sufficient, too, just as we want them to be self-sufficient. We have already addressed elementary and secondary education in Kentucky and I got that package passed in a special session.

I am addressing higher education in Kentucky right now and vocational education during this session of the legislature.

Mr. BEVILL. In the Central Appalachian Regional Commission area already the drop out rate I notice is fifty nine percent above the national rate.

Governor COLLINS. Extremely high.

Mr. BEVILL.

Now, you referred to what President Kennedy advocated and this is to help a region of the Nation to have the equal opportunity of the rest of the Nation. This is really what ARC is all about; isn't it?

Governor COLLINS. And what America is all about; yes, sir.

Mr. BEVILL. And what America is all about. It is as American as apple pie; isn't it?

Governor COLLINS. That is right. The way I look at it, you are going to have to pay for these people one way or the other. I prefer to pay in positive ways. I prefer to pay in better education, in health care, in roads, in housing, and that type thing than to pay in a negative way or in a reactive way.

Mr. BEVILL. We are continually called upon to appropriate more money for education in foreign countries, roads in foreign countries, waterways for all these industrial developments. Do you see anything wrong in just taking a drop of that money and spending it—investing it, I should say, in the appalachian region

Governor COLLINS. I would say that I would know my priorities very well. I would set priorities for Appalachia, for America. I am not an isolationist or a protectionist or whatever, but just as we have to do every day, and I am sure, Mr. Chairman, you and the committee would set your priorities.

Mr. BEVILL. You see no harm in just giving a few crumbs to the Appalachian area?

Governor COLLINS. Not at all.

Mr. BEVILL. Well, I think it is commendable you two ladies have presented both sides of this issue I just left a leadership meeting and I was hearing the two sides of those issues. That is what we need to hear. We need to hear both sides.

With that, I will recognize Mr. Myers.

Mr. MYERS. Mr. Chairman, I certainly don't want to get sandwiched between two here, and out of due respect, I don't live in Appalachia.

Governor COLLINS. But you are my neighbor.

Mr. MYERS. I know.

Governor COLLINS. You are supposed to take care of your neighbors.

Mr. MYERS. At this time, I will yield to Chairman Whitten, and I guess I will get equal time. You won't impose the five minute rule now if you start with me, will you?

Mr. BEVILL. Chair recognizes Chairman Whitten.

Mr. WHITTEN. Thank you very much. I appreciate my colleague from Indiana. May I say that I spoke at Itawamba Junior College Monday a week ago, which is in the lower end of Appalachia.

Governor, may I thank you for your reference to me?

May I say it is unbelievable to go into this area and see the progress we have made. That should not be cause for ending it. It should be the cause for continuing it.

I have been to the major cities and these other things and it lets me see how many folks are not looking at progress. Now, I have before me, as Chairman of the Appropriations Committee, and this is based on the recommendations of the various subcommittees, of the Committee views a statement for the Budget Committee.

In this they recommend that we cut out billions of dollars that would go to improve the lot of the people of the United States, not to increase the deficit, but to increase the carry-over of military spending by $299 billion at the end of the year.

Some years ago the President of the United States vetoed a public works bill. It came back and we failed to override his veto. In his veto message he said in view of our debt, in view of our problems at home and abroad, we can't afford these 62 new projects of investment spending in our own country.

It came back to us and with the support of senior members of the Appropriations Committee, I offered the motion to override it. It is the only time in history that has been successful.

Notwithstanding, we sent it back and cut everything 2.5 percent, which is normal slippage. I won. We won and I used his argument. The bad situation that we are in now and all we owe at home and abroad is evidence that we should take care of our own country.

That is what all the rest depends on. So the Appalachian Commission has done such a marvelous job but it is not complete so it should be carried to many areas of this country. I have been to Detroit, New York and Chicago and it is getting worse in most of our major cities in the downtown area.

Now, one of the things that we have, and if you will forgive me because I happen to be Chairman, I have served on the committee longer than others, that is part of it, but in it I have just seen the tremendous development.

If we had not as a Congress carried vocational education from carpentry and agriculture over into training for new type of jobs, we would be in bad shape today. May I say, in this budget we have today they are cutting domestic programs by billions.

I think it would be well to put in the first two or three pages of this report in the record. At the same time we are asking for over $2.5 billion increase in foreign aid, we are doing in foreign countries what the Administration recommends we cut out over here.

[The Committee Report excerpts follow:]

HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS
VIEWS AND ESTIMATES

ON THE

BUDGET PROPOSED
FOR FISCAL YEAR 1987

SUBMITTED BY MR. WHITTEN, CHAIRMAN OF THE
COMMITTEE ON APPROPRIATIONS, PURSUANT
TO SECTION 301(d) OF THE CONGRESSIONAL
BUDGET ACT OF 1974

TO THE

COMMITTEE ON THE BUDGET

The Fiscal Year 1987 Appropriations Situation

The Committee on Appropriations faces one of the most difficult tasks in its history in regard to this year's budget requests.

The budget proposes major reductions in domestic programs while at the same time proposing large increases in military spending. Cuts in domestic spending total $30 billion in budget authority while proposed increases in military spending total $34.2 billion.

In addition, the Administration calls for rescissions of $9.9 billion and deferrals of $22.9 billion. The budget also proposes the sale of the regional power marketing administrations (Bonneville, Alaska, Southeastern, Southwestern, and Western), the naval petroleum reserves, government owned real estate, and proposes restrictions on the rural electrification administration, housing, and other Federal activities.

Major programs proposed for termination or elimination include the following:

Programs eliminated

[Budget authority]

Agriculture conservation programs	$497,900,000
Rural development programs	2,801,500,000
Farm loan programs	1,220,000,000
Agricultural research and extension	118,805,000
Economic Development Administration	201,000,000
NOAA sea grants and coastal zone management grants	75,000,000
Juvenile justice and delinquency prevention	64,693,000
Legal Services Corporation	305,500,000
Small Business Administration	213,000,000
Appalachian Regional Commission	117,000,000
Export-Import Bank	1,062,300,000
Sub-Saharan African Facility	71,800,000
Urban development action grants	330,000,000
General revenue sharing	4,185,000,000
Indian Health Service facilities	78,585,000
DOE—low income weatherization assistance	182,084,000
Strategic petroleum reserve	446,484,000
Health professions assistance	224,000,000
Impact aid "b" payments	130,000,000
Library assistance	128,000,000
Amtrak	590,000,000
Mass transit discretionary grants	1,000,000,000
Washington Metro construction	217,000,000
Postal Service—revenue foregone	708,000,000

Programs with significant reductions

Rural electrification loans	1,100,000,000
Cooperative extension service	118,000,000
Food stamps	350,300,000
Child nutrition	755,500,000
Department of Energy—Energy Research	721,025,000
HUD—Assisted housing programs	10,566,000,000
HUD—Community development grants	1,000,000,000
VA—Medical care	400,000,000
VA—Construction	200,000,000
EPA—Construction grants	600,000,000
Interior—Land acquisition and construction programs	219,992,000
Jobs Corps	288,000,000
Summer Youth	236,000,000
National Institutes of Health	417,000,000
Rehabilitation and handicapped services	244,000,000
Vocational education	440,000,000
Student financial assistance	1,073 000,000
Public broadcasting support	84,000,000
Mass transit—formula grants	1,000,000,000
Interstate transfer grants	400,000,000
Coast Guard—Construction	130,856,000
Tennessee Valley Authority	99,528,000

If these and other proposed reductions were to be adopted by the Congress, it would weaken the nation's ability to maintain the strong economy essential for public support and a strong defense. In past years, the Congress has not cut military spending; it has only reduced the rapid rate of increase proposed by the Administration. Indeed, appropriations for military spending have gone from $144 billion in FY 1980 to $286 billion in FY 1986. In the Committee's view, a realignment of domestic and military priorities similar to those the Congress has made in prior years will probably be necessary in connection with the fiscal year 1987 budget.

The Committee on Appropriations recognizes that the soundness of our defense, including Department of Defense procurement, our military forces, and related programs, depends upon a healthy domestic economy and public support. To retain these essentials, it is absolutely necessary to protect and develop our physical resources and protect essential domestic programs in order to maintain public support for defense. It is our country and our people on which all else depends. We need a strong defense—but we can never have a strong defense unless it is backed by a strong country—strength that can only come by developing our nation's resources—our real wealth—with an educated, healthy populace, and with adequate food and nutrition flowing from a strong agriculture base.

The Committee points out that even though it has held the line overall for the past five years and has recommended appropriations below the budget request, the debt has increased tremendously. The Committee on Appropriations has acted, and will continue to act, responsibly in regard to the deficit situation. It is mainly other areas, including revenue, that must be addressed by the Congress and the Administration, if the deficit situtation is to be controlled.

Several factors depicted in the President's budget, some of which are outside the jurisdiction of the Committee on Appropriations, will greatly affect our efforts. For example:

—The revenue loss in 1987 due to the 1981 Tax Act will be $244,800,000,000, or more than the entire estimated unified budget deficit. The net revenue loss in 1987 reflecting all changes in recent years will still be more than $150,600,000,000.

—Great attention has focused on the need to reduce the deficit in connection with the fiscal year 1987 budget. The Administration is proposing a deficit figure of $143,600,000,000. However, this figure is based on unrealistically low outlay figures in defense and on drastic domestic spending reductions and policy changes. Many of the proposed policy changes have been transmitted previously to the Congress and have been rejected. These include several different user fee concepts and other legislative proposals not previously acceptable to the people's branch of government.

—While the projected deficits show large declines in future years, the decline in the increase in the national debt is far less—because the deficit numbers ignore trust fund borrowings. Thus, while the deficit figures are $143.6 billion in FY 1987, $93.6 billion in FY 1988, and $67.5 billion in FY 1989; the increase in the gross national debt is $208.6 billion in FY 1987, $188.3 billion in FY 1988, and $175.4 billion in FY 1989—far less impressive decreases.

—Another way of looking at the magnitude of the deficit problem is to examine the increase in the total public debt. When the current Administration took office, the debt subject to limit was $932,288,000,000. By the end of fiscal year 1985 it had virtually doubled to $1,827,500,000,000. By 1987, it will grow to $2,320,630,000,000 and will further increase to $2,508,954,000,000 in 1988.

Not only that, but the increase in the carry-over of unspent money for the military goes from $244 billion in carry over at the end of fiscal year 1986 to $299 billion at the end of fiscal year 1987..

What we don't recognize in Congress is the difference between investment spending that brings dividends and spending that brings nothing. We use foreign aid to get involved in the internal affairs of just about every country around the world; we have 315 foreign military establishments which we finance. We are still paying $4.6 billion to Germany. We give a $1.5 billion annually to Japan.

So I think what we should be doing is just recognizing the great benefits that have come to this region as evidence that we should complete it, and also should spread this approach to other areas. You say, well, it is just this region. Well, the interstate highway system, if somebody hadn't had the foresight, wouldn't be in place today?

I supported the Tennessee Valley Authority, when they passed it. TVA has repaid in benefits and in taxes in the region far more than you can ever measure.

And we have other places in the country. I want to say I don't know any group or anyone that has done a greater job than the Appalachian Regional Commission with the support of members of this subcommittee.

In the beginning each State looked after its internal affairs and we had chaos. No progress, competition everywhere. We don't have two sets of citizens. The citizens of the States are the citizens of the United States. Just about anytype of thing you can think of that we have has been supported by the Nation and not just locally.

So I say again I won't go in to more detail here, but I appreciate my colleagues effects here. You can always count on John Myers and my other colleagues to do the right thing for the country. I say we need to look around us and realize if we are going to go look after the world, we had better look after home first or we will fail.

I appreciate you giving me a chance and I realize I have been talking in generalities, but I am proud. You know, I have supported New York City. How in the world could we let your biggest city go under and argue with Russia about our system? Also, I supported the Chrysler loan.

But what I mean is we have got a Nation and did you ever wonder why the word "United" is in it. Because they recognize we better pull together and this is in one locality. Let's spread it to other localities and not dry it up where it has proven to be so successful.

Thank you very much, Governor, and Ms. Co-Chairman. I want to say you have done a great job and so have the other Governors but if other people will go down there, they will come back here and recommend we carry it somewhere else along with it.

Thank you very much.

Mr. **Bevill**. Thank you, Mr. Chairman. I yield to Mr. Myers.

Mr. **Myers**. Chairman Whitten has been a great help to all of us here through the years through his wisdom and his experience. He has been invaluable to members of the Appropriation, as well as to the full Congress. He is the dean of the House and certainly in Appalachia he is the most valuable asset you have notwithstanding all of you here.

You know, we do have a difficult task, we in Congress. I don't think any of us here this morning voted for Gramm-Rudman, but we still have to live with it. We are going to have to do it.

If we don't do it here in this Congress to find those funds, guess who is going to make them? I am preaching now to my colleagues over here that we are going to have to work together to make some cuts or guess who is going to get cut.

So the burden is on us to make the decisions that rightfully Congress and this Appropriations Committee should make and this is one of the agencies that is certainly going to be impacted if we don't find a way to meet the demands of Gramm-Rudman, there are going to be agencies like this that are going to get the cuts.

So I hope you folks also realize that as you lobby your members of Congress. I know, Chairperson—are you a chairperson or chairman?

Ms. PIZZANO. I am still a chairman.

Mr. MYERS. Co-chairman. I might add, she is a frequent visitor in our offices and she complements Governor Collins with her willingness to cooperate and work together. While you may come from different apprcaches here, Chairman Pizzano says you are most easy to work with and very cooperative and that is a great compliment.

I have to compliment Chairman Pizzano. Your task is a difficult one to plead here for your demise on one hand, and yet to present the facts as you most honestly do here and recognize the accomplishments that ARC has had through the years. ARC was two years old when Chairman Bevill and I came to Congress, but it has come a long way in the 20 years we have been here.

I guess we have been on this committee 16 of those years. Most of the years of the success and history of the ARC.

Governor COLLINS. You all have done well.

Mr. MYERS. We have a very good working relationship. We work together very closely, as you all know. I am concerned, as I have been in the past, the taxpayers of Indiana do support and we recognize our responsibility to help areas of the country that need assistance and that is what the National Government and Federal system is all about. However, of course, we were in competition for the Toyota plant, also, and we compliment you for being successful.

But as you gave credit here this morning, the taxpayers of Indiana helped contribute to their own demise because they couldn't be competitive, because we don't have the highway system that the taxpayers of Indiana helped pay for for the taxpayers of Kentucky. So it does have a counter-balance here, and it is difficult for me to go back home and justify why I vote to spend their money in areas that makes my constituency less competitive.

But we are willing to do that. That is our responsibility and we ask for the job. But in the history, as I recall, here most of the money through the years has gone for highway development. Next is health care, improving hospitals and things like this and education.

I don't know if I am quite right in the order of priorities here, but in education I read through what you are asking for here, your request and I have difficulty finding out how much is going to education, how much is going to go to education. I guess, Chairman Pizzano, you can't answer this because your side of the aisle or your request didn't have that in there.

Mr. MORAVITZ. In the Governor's budget they are anticipating for 1987 about $6 million for vocational education.

Mr. MYERS. $6 million out of $311 million going to education, yet a very fine presentation here that education is very necessary, and the drop out rate is a great problem. We all recognized is part of the solution to our problems in economically distressed areas, as well as, of course, when Appalachia was organized again two years before the Chairman and I got here, but education has been very vital, very important. It seems to be lacking in priority, only $6 million out of $311 million for education isn't a very good shake out for education.

Governor COLLINS. Let's look at the cost of building roads, though, because in the area where roads supported by ARC are built, it costs a whole lot more to build a mile of road there than it does in your State. So that is why it is more costly for us to build the roads and that is why you have to put a larger sum of money in there.

I am a great education advocate, but I do think that we have our priorities straight.

Mr. MYERS. I am not an engineer and I don't know. Of course, it does. Of course, engineer-wise, it cost more to go up and down a hill, but buying farm land is worth a whole lot more than some of the mountainous areas. I am not saying anything against your land because you have some flat land, too. Of course, it costs more to cut through.

Mr. MYERS. I know that you say unanimous of the 13 Governors and in the spirit of bipartisanship, three of them are Republican, are they not? Of course, Arch Moore, four.

Governor COLLINS. Four.

Mr. MYERS. Arch is an old colleague of ours, Governor of West Virginia.

You do have bipartisan support there.

Governor COLLINS. Yes. It was a bipartisan budget.

Mr. MYERS. That is good.

Governor Collins, you mentioned just a little bit longer for this program. How much longer?

Governor COLLINS. Well, that depends on how much you give us this year on the next budget.

Mr. MYERS. If you got the entire $311 million, then how long would it be? When is that light at the end of the tunnel? How far down the tunnel is it?

Mr. MORAVITZ. At this particular point in reference to the Governor's finishing-up program, there is $138 million in the non-highway area that is unfunded, and in the highway, which is the biggest, $1.6 billion, that is unfunded.

Mr. MYERS. We have to guess how far down the road that would be. You know, we want to do what is right.

If anyone can count, ARC is not going to be phased out this year. It is not going to be out. You don't have to go beyond this committee to recognize what is going to happen.

But some of us would like to when we go back and defend our vote and we have some expectation here why we have to defend our position on us and it would help us if we had some idea how long it would be.

On education, you say $6 million.

Mr. MORAVITZ. May I correct that, sir?

The Governors' budget that we have submitted has six million for vocational education and another three million for basic skill program that is more related to the drop out problem. The total is nine million.

Mr. MYERS. Three percent of the budget, or approximately that, of your total budget request.

Mr. MORAVITZ. It is nine million out of 70 million in the non-highway area. The one thing that we have found is that whether there is a budget cut in the non-highway funds or the full 70 million, the Governors tend to give a priority commitment to the education projects so that you end up putting a higher percentage; if the budget is 35 million, you end up spending nine million for education.

Mr. MYERS. That was going to be my next question.

Governor, I hope you have a bigger proportion of your budget in Kentucky toward education than this does. What would be the percentage requested in your State budget for the State legislature in education?

Governor COLLINS. Out of a $10 billion budget I guess you are talking about a tenth.

Mr. MYERS. Ten percent.

You mentioned, Governor, that one-third of the defense—you only got one-third of your share of the defense budget. We hear this quite often. However, defense expenditures must not and cannot be job creating. Of course, primarily it is the responsibility, but after 22 years, if it has not improved any, again it is an indictment of your efforts and I would like some justification why you are only still getting one-third after 22 years of Appalachia programs why you only have one-third of the defense budget.

We are not doing any better than that in my district and we didn't have any Appalachia program helping us out. It could not be and should not be jobs alone.

Governor COLLINS. You don't have the high unemployment that I have.

Mr. MYERS. What is your State average?

Governor COLLINS. Better than ten right now, and 13.5 percent in Appalachia, Kentucky. In fact, out of 49 Kentucky counties in ARC, 30 of them have two times the national unemployment rate.

Mr. MYERS. Last election when I was elected, my home county had a 25 percent unemployment rate, 25 percent.

Governor COLLINS. That is why they sent you up here.

Mr. MYERS. I had been here for 18 years then.

Governor COLLINS. It is serious. It is serious, but we have such a concentrated area which is why we have to have help.

Mr. MYERS. The Toyota plant is going to help that one area anyway.

Governor **Collins**. And others. At least that is a beginning of getting business in there that can create jobs and contribute to that area.

Mr. **Myers**. I think it certainly should, that is for sure. My last question, Governor, Appalachia goes roughly right down through the middle of your State, does it not, the commission area?

Governor **Collins**. No, it is in Eastern Kentucky.

Mr. **Myers**. It is not half of it then?

Governor **Collins**. Fifty out of 120 counties.

Mr. **Myers**. That is 40 percent then. How do you say on this side of the county line there is a road down here, there is an Appalachia and other side there isn't. Are there any types of problems where you can justify one side of the county getting more money than the other side?

Governor **Collins**. That is not discussed when you are talking about a campaign. What we are trying to do in our counties, whether it is about dropouts or whatever, is to get a public awareness of where we are and what we need to do to improve. Then with your area development district working with, of course, the help of ARC, and with the help that we can give them from State Government, we are trying to help these people become self sufficient.

So, hopefully we are getting them to the point where, again, just as I am trying to get you to say that you will be for any region of the United States—I don't want one county saying I am going to get mad if that side of the county gets a road and I don't because what is good for them for one side is going to be good for the whole county.

Mr. **Myers**. How does your legislature treat it when you are making your budget request, the legislature appropriating money for the various——

Governor **Collins**. They attempt to get what they can.

Mr. **Myers**. One county gets a lot more money than the next county, doesn't it?

Governor **Collins**. No.

Mr. **Myers**. Then your legislature has to make some adjustments. One side of the county has to make education and schools a priority and the other doesn't. You have to have an adjustment. Otherwise, you would have somebody building a boundary down the middle of the State. It would be a problem making adjustments, wouldn't it?

Governor **Collins**. When you have eastern Kentucky bordering a central Kentucky area, they understand the need to be self-sufficient and they are working. It is a good team effort really.

Mr. **Myers**. Doesn't present problems to you?

Governor **Collins**. No.

Mr. **Myers**. I have never served as a Governor. I would think it would present problems to you. If it does not, that is good.

Again, I am only one member of this committee and a minority member at that, but in projecting something good that is going to happen, I don't know what it is going to be. I will compliment both of you for your spirit of cooperation in working together as we do on this committee, too. Partisanship does not enter into it here and it must not.

I am kind of sorry sometimes to think that because the present Administration has recommended demise of ARC that we get branded as being pro or con or that partisanship had something to do with it, it is just a difference of philosophy I think more than anything else. So we can be friends.

Mr. MYERS. Thank you.

Mr. BEVILL. Thank you, Mr. Myers. The Chair recognizes Mrs. Boggs.

Mrs. BOGGS. Thank you, Mr. Chairman.

Mr. Chairman, and John, I would like to say that this is a really wonderful occasion for me. Usually Chairman Pizzano and Governor Collins, I am asking people who are appearing before us sitting at this table, how many women they have in top positions. So it is a special joy to be here and to be with you and to thank you both for your excellent documents and presentations and for the work that you have accomplished and the plans that you have and the difficult position that you, Chairman Pizzano, are confronted with. I would like to say that Governor Collins has not only worked so diligently in the field of education and in insisting upon having an anti-drop out program and a preventive program to try to keep the suspected young people from becoming drop outs, but she has also made possible the installation of the Toyota plant and has aggressively gone out for her State and region abroad.

I had an interesting conversation with the head of our training center in New Orleans not long ago who had just come back from Japan. He was very pleased some of the industrialists there had mentioned wanting to see me when they came to New Orleans and he said I certainly was glad to hear that because it was the lady from Kentucky who went over there and aggressively got that Toyota plant with her own outreach and determination and willingness to go aboard and to be an ambassador for the United States in trade and commerce.

I really am very, very proud of you.

Governor COLLINS. Thank you.

Mrs. BOGGS. We are sorry, some of us lost the Toyota plant, John, but I am glad she aggressively got it for her region in the part of the United States that needs it and it verifies the need for the kind of educational programs that you Appalachia Governors have put into place.

I have been interested always, Chairman Pizzano, in how the collaboration among the Federal, State and local governments that ARC provides have worked in order to build a healthy and productive approach to addressing the problems and the needs of the region and its people.

Has that collaboration been especially good under your tenure in office?

Ms. PIZZANO. I think it works very well. The Governors agreed long before I came how they would proceed and what policies they would prefer to see implemented with the use of these funds because they knew best, at their level, how it would complement what they were otherwise able to do in their own States.

When I came I had some additional ideas which to some extent we have been able to discuss and put into what we call a code. We have funded projects lately in the area of export development and encouraging small business development, trying to follow some of those trends which are taking place. The Governors also support the local development districts which are the groups of people at the multi-county level as do I.

So we all work together.

Mrs. BOGGS. You have used all of the resources that the Federal programs—that can be related to the ARC programs?

Ms. PIZZANO. Very few projects come across my desk which do not have other Federal funds associated with them, whether they be HUD, Farmers Home Administration or others.

Mrs. BOGGS. Several years ago I was interested in the coordination of programs for housing, particularly in the areas of housing for the elderly and the handicapped and also for the use of the CDBG grants in order to coincide with the ARC programs and with the housing programs from HUD.

The ARC spent a great deal of time working out some of the programs and I had this particular interest because one of my other committee assignments is HUD and the independent agencies subcommittee.

I noticed, Governor Collins that under the Governors' submission that in the use of examples of infrastructure and other projects funded under the jobs and private investment programs in fiscal year 1985 there was included the following: "continued housing assistance for site development in the new construction and rehabilitation of housing for low and moderate income families. In Pikeville, Kentucky, ARC provided a grant of $200,000 for site development activities in the new construction of 60 apartments in downtown Pikeville. The only project in Kentucky to receive HUD housing development grants, (HODAG,) of $1,430,000, Hellien Manor will be permanently financed by tax exempt bonds in the amount of $1,850,000. In many of the more rural counties of the region ARC funds were matched by CDBG funds and conventional home improvement loans to rehabilitate housing.

ARC funds generally paid for site improvements in the revitalization area." It is a wonderful example of cooperation among the various programs and the various levels of government. What I would like to ask you is, is there any way for cut backs in the other Federal programs such as CDBG that you could accomplish the same kind of success that you were able to accomplish in this area?

Governor COLLINS. No. See, that is the thing. If there are tremendous cuts or the abolishment of this Commission, and then cuts in HUD, cuts with the grants, cuts with Farmers Home and all those, there is really no way the State can just come forth right away and be able to do that type of thing.

That is why I am saying this from a governor's point of view. We have talked about this at governors' conferences and when we get together. We understand the challenges that you all have to try to have a balanced budget and take care of the deficit and everything, but there have to be priorities and you have to have time.

We just cannot do it overnight. We are very proud people in Kentucky. We would like to be able to say we could do it all ourselves. You mentioned Pikeville and what we have done there. It is just like the spring floods.

Fortunately, we haven't had too much snow, but if we have a big flood we are going to have the need for a lot of housing and we are trying to move those people from right around the creek beds and the river beds up to another site location, whether it is a reclaimed mine site or whether it is like just a new renewal area.

So, the answer to your question is, no, we cannot do it without your help and we cannot do it if there are severe cuts in all of these programs at one time.

Mrs. BOGGS. Because in the proposed budget, the Administration budget, CDBG is cut back and more programs are imposed upon it so it is really sort of double jeopardy.

In addition to that, of course, there is no money in the budget for public housing units at all. Chairman Boland of the HUD subcommittee is dedicated to, of course, having some of that money restored, but I am just curious about how either the phase out programs that, Ms. Pizzano, you are dedicating yourself to with fervor and intelligence and devotion, can possibly really be phased out without the help of the other government programs that are going to be severely restricted as well.

Ms. PIZZANO. I think if the cuts across-the-board are made in an effort to address the deficit situation, there is no question but that if you cut ARC and cut CDBGs you have created a situation where we wouldn't have as much housing funds available.

On the other hand, in the Governor's finish-up program, while I wouldn't say that housing isn't a priority, they have downgraded it and have tried to invest most of their funds in job-creating activities and it is those funds that will be more appropriately used.

Governor COLLINS. I think the whole attitude and the whole thing we are all trying to get to is the overall quality of life. Being a mother and having taught school for eight years, I know young people can succeed against great odds.

There are certain ones that can. They just have it in them and they do, but it certainly does help if a child you are trying to teach comes from a home that is warm, that is dry, that is a home with parents that are educated, all those types of things.

That is what we are trying to do in Appalachia is to provide that quality of life to the point that we re-instill that hope for a dream and for the ability to make the contribution themselves so that they can be self-sufficient and can contribute to Appalachia, to eastern Kentucky, to all of the whole United States because I firmly believe that America is only going to be as strong as each county in these United States.

Mrs. BOGGS. That is the true Federal system. I compliment both of you and all of you on the contributions you have made to it.

Thank you, Mr. Chairman.

Mr. BEVILL. Yes. Governor Collins, if the Appalachian Regional Commission program were just abolished, there are no other programs for the States to use to take the place of what is being accomplished.

Governor COLLINS. Right.

Mr. BEVILL. Ms. Pizzano, you made a statement there I think is very, very key in the testimony. During 1983 to 1985, 287 infrastructure projects ARC funded, with a total cost of $54 million, attracted almost $97 million in private investments. When completed, it will create approximately 26,000 new jobs.

I think that is a very significant statement. This has been one of the outstanding features of the ARC program.

I think that is commendable and that sums it up very well. The program is really giving the State's "seed" money and an incentive and ability to do more in education, health and industrial development, including a highway program. Would that be a fair statement?

Ms. PIZZANO. It certainly gives them additional funds, Mr. Chairman.

Mr. BEVILL. Yes. Are there any other questions?

Yes, Mrs. Smith?

Mrs. SMITH. I was sorry that I had to leave for a few minutes. I had a bunch of broadcasters from my district back. I do want to commend both of you.

You made outstanding presentations. I was particularly impressed about what each of you said about reducing the drop out rate. I was so impressed, Mr. Chairman, by how you pointed out that this takes people off welfare and gets them to paying taxes for the future.

So we commend you and appreciate you being here very, very much.

Mr. MYERS. If it works, we are going to adopt it in our areas, too. So keep us informed.

Mrs. SMITH. By the way, we might adopt it in Washington, D.C. I read the other day where we have a drop out rate of 54 percent in the District's schools.

Mr. BEVILL. Sets a very good example of what can be done, doesn't it?

Mrs. SMITH. Yes, it does.

Mr. BEVILL. This subcommittee has been very supportive of this program and Mr. Myers there, Mrs. Smith and all have just worked together on this. We are all really very proud of what you have accomplished in the Appalachian through chairmanships and we hope to be able to not use the meat ax approach on this program.

Gramm-Rudman has been mentioned. Of course, Gramm-Rudman does not discontinue ARC. It may cut four or 4.5 percent. We have been doing that. Actually, this subcommittee has traditionally been under the President's budget every year, less money than he asked for in his program.

As a matter of fact, the President received our bill first, which is usually the first of the 13 appropriation bills, and not only did he sign it first when the other 12 chairmen were saying let's not send any bills over there, the President has already announced he is going to veto some bills so we better not send any over right now and then the President signed it first.

Not only did he sign it, but he wrote us a nice letter commending us for cutting the fat out of the bill and for doing our share toward reducing the deficit. We have traditionally done that. We have never had a bill go out of this committee that exceeded the President's budget, never.

This committee is doing its share to control the deficit. We are doing our part and we will continue, of course, doing our part.

So I think the program should continue—obviously this committee has consistently felt that way. You are testifying here, Governor Collins, about the unanimity of 13 Governors. That is commendable any time you can get 13 politicians together and they all agree, I think that is a record.

We appreciate you, too. You have obviously received the red carpet treatment from this committee. So you see we all appreciate you. You have done a great job. What we are discussing here today is every meeting I go to, same thing. When I said the good and bad, I should have gone a little further and said when we talk about the good is what we need to get done, what we need to accomplish, what the priorities ought to be, and the bad thing is we have got this big deficit to come up against, so we have to have some solutions on that, too.

It has put everybody in a position of decisionmaking a very difficult question as to what should have priority. So naturally there are going to be differences. But I think the two of you have certainly presented it—it couldn't have been done any better. We appreciate you very much.

Any other questions or any statements?

Mr. BEVILL. This committee adjourns until one o'clock Monday.

[The following questions and answers were provided for the record:]

PROGRAM OVERVIEW

Mr. BEVILL. How have economic conditions of Appalachia improved in the last 5 years?

Ms. PIZZANO. During the recession, Appalachia's unemployment rate was 60 percent higher than the nation's. Today, while the U.S. unemployment rate is about 6.7 percent, Appalachia's is 9.0 percent. With the growth of national employment, some area in southern Appalachia are experiencing an economic boom. While portions of the Region have lost manufacturing industries, other areas have maintained employment by replacing these industries with new employment in trade and service.

Mr. BEVILL. How and in what ways have economic conditions worsened in the same time period?

Ms. PIZZANO. The Region's economy in the past five years was adversely affected by national and international events. The Region had a disproportionate share of traditional and nationally declining manfacturing industries (steel, apparel, textile, wood products, etc.), which lost a substantial number of jobs due to the recession and have not fully recovered. Competition from foreign goods, and high interest rates in the early 1980s also contributed to the Region's economic problems.

Mr. BEVILL. What role has the Appalachian Regional Commission had in affecting those economic conditions in the last five years?

Ms. PIZZANO. In my opinion, it would be difficult to estimate how much of an affect ARC programs have actually had on economic conditions in the last few years. The recent economic growth and recovery of our nation has undoubtedly had an effect on Appalachia also and should continue to do so in the future. The ARC has had a constructive role in improving the Appalachian economy by providing assistance in building the Region's physical infrastructure of highways, sewer and water facilities, and other physical facilities including those for health and education.

Mr. **Bevill**. How would conditions other than the region's economy be different if the Appalachian Regional Commission had not provided assistance in the last five years?

Ms. **Pizzano**. The bulk of the Commission's resources have been concentrated upon economic-related projects during the last five years, so that very little would be different in the non-economic conditions of Appalachia.

Perhaps the greatest exception to this would be in the area of health. During the last five years, we have, through our health finish-up program, provided basic health care within 30 minutes of all people in the region, with the possible exception of those living within 12 of the region's 397 counties, reduced the infant mortality rate so that it is about even with the U.S. rate (11.9 deaths per 1,000), and assisted in physician recruitment and placement in underserved towns and hamlets througout the region.

In addition, during the past five years, we have continued to help provide Appalachians with such basic services as safe drinking water and solid waste disposal even if no immediate economic growth could be assured.

Mr. **Bevill**. In addition to the Appalachian Foundation, what alternative approaches could you suggest that could address the needs of Appalachia?

Ms. **Pizzano**. As I stated in my testimony, I believe that the most serious problems remaining in the region are economic ones unlikely to be solved by ARC resources and processes.

In my view, Appalachia would be better served by programs that would encourage small business development, increased leveraging of investment capital, education initiatives by states and local communities, and the development of export opportunities.

Mr. **Bevill**. What do you consider to be the most pressing needs in the Appalachian Region?

Ms. **Pizzano**. The problem of school dropouts in Appalachia remains serious. In the over-25 population, the percentage of those who had not completed high school in Appalachia is 42.6; for the nation it is 33.7. Among the 18–24 year olds in 1980, excluding Pennsylvania and New York, Appalachia's rate was 25.3 versus 30.1 for the nation. Ten of our states rank above the national average. It is estimated that nearly 50 percent of the unemployed are functionally illiterate.

As part of ARC's 20th Anniversary, the Commission began to focus attention on school dropouts. The dropout program has several components, such as the identification of those programs which work, matching grants with private funding, funding for technical assistance and training, and a regional meeting to address the problem.

In our changing economy an educated work force is crucial to attracting and retaining business in Appalachia. Our Governors have been at the forefront of excellence in education, and this effort will support their efforts and bring in the private sector.

Mr. BEVILL. What Federal Government programs other than ARC are there that provide for these needs in the Appalachian region?

Ms. PIZZANO. There are several Federal programs that provide similar assistance as ARC to all areas of the country including Appalachia. HUD's Community Development Block Grant program makes grants to state and local governments to fund local community development projects that support housing rehabilitation, economic development, public works and other activities that create and retain jobs. The Federal-Aid Highway System at DOT provides funds by Federal highway user fees for highway construction and repair in all states. At HHS, the Primary Care Block Grant program provides grants to States for operation of community health centers in medically underserved populations. The Department of Labor's Job Training Partnership Act provides job training, job finding, and relocation assistance to workers who have lost their jobs due to plant closings, technological change and increased imports. And the Department of Education has a Vocational Education program providing assistance at the secondary and postsecondary levels.

Mr. BEVILL. What, in your view, remains to be done throughout the Appalachian region?

Ms. PIZZANO. In my view the remaining needs of the Appalachian region are similar to those of the rest of the nation. There is a need for the states to complete the highway development system. There is also a need to improve our educational standards so that adult literacy and job training problems can be better addressed than by our traditional methods. We must increase our exporting capability so that our trade deficit can be narrowed, and an atmosphere to encourage small businesses must be created and sustained since most new jobs created are a direct result of entrepreneurial enterprises.

Mr. BEVILL. What are the Commission's priorities in resolving the health problems of Appalachia?

Ms. PIZZANO. As we reported last year, our major priorities for health care in Appalachia were reached with the conclusion of the 3 year planned finish-up health care program. This program came to a successful completion at the close of FY 1985.

The health care program at ARC had the following priorities: first, to initiate basic primary health care in counties where Federal-designated shortage areas lacked private sector and government involvement; second, to focus programs to reduce infant mortality in counties which had infant mortality rates at least 50% higher than the nation, and finally, to provide technical assistance to recruit needed health care providers for shortage areas in the Region.

By the end of FY 1985, 77 of the remaining 89 counties currently eligible for health care projects had been reached and the remaining 12 counties all had the opportunity to participate in these programs, but for varying reasons, did not. Also the Appalachian infant mortality rates had been reduced to nearly that of the nation—11.95 percent

Mr. **Bevill**. Can you provide an estimate of how much tax revenue—Federal, state and local—is generated annually as a result of investments made through ARC grants?

Ms. **Pizzano**. Mr. Chairman, I don't believe that a clear and credible link between tax revenue and the public investments from jobs created and/or retained has ever been factually established.

Mr. **Bevill**. Can you make a similar estimate of the number of jobs created and retained as a result of ARC investments?

Ms. **Pizzano**. The Commission has estimated that from 1983 through 1985 our Jobs and Private Investment program resulted in 26,000 new jobs and 24,000 existing jobs retained through an ARC investment of 54.2 million dollars.

Based on a 1981 survey, we estimate that the highway program has encouraged new and expanded plant locations along the corridors with nearly 215,000 jobs directly related. It is also estimated that an equal number, (215,000) jobs were created in retail, commercial and service trades.

Mr. **Bevill**. Can you estimate the number of lives that may have been saved as a result of ARC health care programs?

Ms. **Pizzano**. As you know, it is generally accepted in the public health community that improved access to health care has positive results on morbidity and mortality rates.

Mr. **Bevill**. What evidence can you provide that shows that ARC-funded educational programs have contributed to improve literacy in Appalachia?"

Ms. **Pizzano**. There are several indications regarding the improved literacy in Appalachia. For example, high school graduates in the adult population increased from 33 to 57 percent over the past several years.

Beginning in 1985, the Commission launched an additional initiative to prevent adult illiteracy by reducing severe school dropout rates in the Region. To date, the Commission has awarded grants for $2,200,000 for this initiative in eleven of the thirteen states. Our efforts this year will reach 23,000 students in danger of dropping out.

Mr. **Bevill**. What have ARC funded activities contributed to foreign trade opportunities for the U.S.?

Ms. **Pizzano**. A number of ARC assisted industrial parks and ports and trading companies will facilitate export trade, such as those along the Tennessee Tombigbee in Aliceville, Alabama, Columbus, Aberdeen, Amory, and Itawamba, Mississippi, as well as the previously mentioned Pickensville, facility.

A sampling of recent ARC activities contributing to foreign trade opportunities for the U.S. include: placement of trained export specialists in each of Pennsylvania's seven local development districts, to identify and assist local firms with export potential; support for startup and specialized technical assistance to assist the Wood Products Marketing Co-op of small producers serving Appalachian Alabama and Mississippi; development of a program to identify potential exporters and provide them with training and specialized assistance from staff and existing successful exporters in Appalachian South Carolina; a feasibility study and development assistance for an export trading company in cooperation with the Huntsville, Alabama, Airport Authority; funding of a 12 month demonstration project in Cattaraugus and Allegany counties, in New York will provide one-on-one assistance to small businesses interested in exporting; The creation and expansion of the Tennessee Competitive Export Corporation, the state's highly successful export initiative, provides marketing, financing and other assistance to Tennessee firms with products suitable for export. We have also published a "Market Guide for Coal Exports," and manuals of "Coal Export Financing" and "Coal Export Methods and Trends."

PROPOSED RESCISSION OF FISCAL YEAR 1986 FUNDS

Mr. BEVILL. On what date did OMB inform the ARC that FY 1986 funds would be proposed for rescission?

Ms. PIZZANO. We were informed by OMB through a telephone conversation on December 12, 1985.

Mr. BEVILL. What is the basis for the rescission amount of $81 million?

Ms. PIZZANO. That amount represents about two-thirds of the ARC appropriation for FY 1986. Apparently, OMB assumed that we would have committed one-third of our funds in the four months between October 1 and the end of January when the President's budget would be presented to Congress.

Mr. BEVILL. What programs, projects or activities would be rescinded under this proposal?

Ms. PIZZANO. The rescission would be applied to three programs: Highway Corridors, Jobs and Private Investment, and the Distressed Counties program. State allocations within these program areas would be reduced proportionately. No programs would be pletely eliminated.

Mr. BEVILL. What projects were funded before the rescission?

Ms. PIZZANO. Only the projects that were pending and could be funded under the allocations carried over from 1985 funds. The 1986 allocations were made at our Commission meeting on February 25, 1986.

Mr. BEVILL. What is the impact of the rescission on the (a) Health Finish-Up Program, (b) Distressed Counties program, (c) Jobs and Private Investment Program?

Ms. PIZZANO. The Health program was completed in 1985 so would not be affeted. The rescission would cut the Distressed Counties and Jobs and Private Investment programs by about two-thirds. States would have to determine which projects in those programs were of highest priority within their reduced allocations.

Mr. BEVILL. What is the effect of the proposed rescission on the operation of the Commission? What functions are currently being performed?

Ms. PIZZANO. No rescission is proposed for staff operations at ARC or the agenices that assist in administering the program.

BUDGET SUBMISSION

Mr. BEVILL. Did ARC submit a budget request to OMB for FY 1987?

Ms. PIZZANO. No budget request for FY 1987 was made by the Federal Co-Chairman since the Administration's policy and annual budget mark has been clear for at least the last four years.

Governor Harris, the States' Co-Chairman last fall, did submit a request to OMB on behalf of the Governors for the same amounts as now proposed to you by Governor Collins.

Mr. Bevill. Did ARC receive a formal, or any, reply to that request?

Ms. Pizzano. Since no budget request was made by me, no response of any kind was received.

I do understand that acknowledgement to Governor Harris' request was received by him from OMB.

Mr. Bevill. What have you done to execute the FY 1986 budget? How much has been obligated?

Ms. Pizzano. Just this Tuesday, the Governors and I completed action on the states' plans and allocations for FY 1986 and I will now be approving projects consistent with those plans and within allocations remaining after Gramm-Rudman and action on the proposed rescisson.

Through January, 1986, 2.6 million dollars have been obligated using prior year balances, with an additional $28.5 million of project commitments awaiting obligation.

[A list of projects follows:]

AREA DEVELOPMENT PROJECTS
APPROVED, FY 1985

Name of Project	ARC Funds	Project Cost
ALABAMA		
CONSOL TECH AST PLNG/EVAL&PROG DEVEL	200000	400000
RANDOLPH CNTY WTR SYS IMPROVEMENTS	300000	554700
BIBB COUNTY WATER SYSTEM	186000	378000
IMPROVEMENTS TO BERRY WATER SYSTEM, PHASE 1	12500	12500
DORA/SUMITON SEWAGE SYSTEM	19829	925398
FAYETTE CNTY INFANT MORTALITY PROJECT	30450	60900
WINSTON COUNTY MATERNITY PROJECT	19999	40003
WALKER COLLEGE NURSING & ALLIED HLH SERV BLDG	50000	50000
AL WALKER COLLEGE CHILD DEVEL/CARE CENTER	317800	317800
URC/AL UNIV NETWORK PROMOTE ECON DEV AL REGION	250000	250000
MUSCLE SHOALS EXPANSION SEWER TREATMENT	300000	1900000
LAWRENCE COUNTY LANDFILL	100000	200000
JEFFERSON ST JR COLLEGE SUPPORT FOR HGH TECH	253089	506178
MT. HIGH-ROCK SPRINGS WATER SYSTEM	294000	395000
COOSA COUNTY AREA WATER SYSTEM IMPROVEMENTS	190000	390000
OXMOORE WEST INDUSTRIAL PARK	300000	4395000
MOUNTAIN VIEW INDUSTRIAL PARK	293000	586000
CITY OF TALLASSEE WATER+SEWER IMPROVEMENTS	250000	624917
HUNTSVILLE/MADISON CNTY IND PARK ACCESS RD	296000	1480000
CITY OF CULLMAN WATER SYSTEM IMPROVEMENTS	300000	3103000
SOUTHSIDE INDUST. DEVEL SEWER SYSTEM IMPROVMNT	150000	624300
SPRINGVILLE INDUSTRIAL PARK IMPROVEMENTS	66920	174080
REFORM,AL WELL RECONSTRUCTION PROJECT	12500	25000
LOCUST FORK SEWAGE COLLECTION & TRT FACILITY	148000	296000
SULLIGENT SEWER SYSTEM IMPROVEMENTS	159750	400000
OLD COURTLAND ARMY AIRFIELD SEWER LINE INSPECT	69000	69000
UAB MEDICAL EQUIPMENT PROJECT-(AL 5312)	84828	84828
UAB MEDICAL EQUIPMENT PROJECT	100000	298963
AL MARION CNTY BRD OF EDUC. DROPOUT PREV. PROG	14873	29746
WOOD PRODUCTS COOP IN PICKENS CNTY	200000	200000
ACQUISITION OF POLICE VEHICLE FOR TOWN NAUVOO	11340	11340
****** SUBTOTALS FOR - ST AT E = AL	4979878	18782653
GEORGIA		
GA APPALACHIAN HSG FUND	365395	365395
GA'S CONSOLIDATED TECH ASST PROGRAM	204756	405512
GA MNTNS PLNG& DEV COMM HSG REHAB PROG	200000	872500
N GA AREA PLNG&DEV COMM HSG REHAB PROG	200000	854500
BANKS COUNTY PRIMARY HEALTH CARE PROJECT	94150	188300
HARALSON COUNTY WATER EXPANSION	200000	1144375
CITY OF WINDER WATER SYSTEM IMPROVEMENTS	300000	2250000
I-75 CONNECTOR 3 WATER & SEWER EXTENSION	200000	1077550
MENLO SANITARY SEWER PROJECT	150000	1118000
TOWNS COUNTY FIRE PROTECTION	91674	114592
LAVONIA SEWAGE TREATMENT FACILITY	200000	1707000
YOUNG HARRIS WATER SYSTEM IMPROVEMENT	24546	30677
YOUNG HARRIS WATER SYSTEM IMPROVEMENT	24506	30638
LUMPKIN CNTY INDUSTRIAL PARK	200000	645552
SURFACE WATER TREATMENT SYST,BALDWIN/DEMOREST	200000	4136000
FORSYTH COUNTY WATER SYSTEM EXTENSION	200000	400000
CALHOUN-GORDON CNTY IND PARK NORTH RDWY EXT.	66000	144600
GA MURRAY CNTY BOARD OF EDUC DROPOUT PREVENTN	36500	36500
****** SUBTOTALS FOR - ST AT E = GA	2957527	15521691

Name of Project	ARC Funds	Project Cost
KENTUCKY		
KY APPALACHIAN HOUSING PROGRAM	750000	5640000
KY CONSOLIDATED TECH ASST PROGRAM	50000	100000
KY CONSOLIDATED TECH ASST GRANT	165000	370000
KY RIVER REG MEDICAL COMPLEX WATER+SEWER	148000	393575
MCKEE/JACKSON CNTY WATER SYSTEMS IMPROVEMENTS	33000	53000
KY PHYSICIAN RECRUITMENT PROGRAM	29425	58850
MOD-HOMES MANUFACTURING,INC. FLEMINGSBURG	300000	375000
KY STRENGTHENING PARTNERSHIPS BET. SCHOOL&CMTY	56000	54000
KY STRENGTHENING PARTNERSHIPS BET SCHOOL&CMTY	83500	181000
CRAB ORCHARD MEDICAL CLINIC	30000	222435
SPECIAL PRENATAL PROJECT - MENIFEE COUNTY	26400	53679
MOREHEAD UNIV SHEEP INDUS DEVEL	136404	321056
KY APPALACHIAN CRAFTS INDUSTRY STUDY	35000	35000
LINCOLN COUNTY HEALTH CENTER	40000	80000
PINEVILLE COMM HOSP INFANT MORT REDUCTION	39867	79735
APPALACHIAN REGL HOSP..MOVEABLE EQUIPMENT	274917	2242841
KY OWSLEY COUNTY BRD OF EDUCATION DROPOUT PREV	30000	30000
BEATTYVILLE SEWER SYSTEM IMPROVEMENTS	192000	660000
BELDEN DRAINAGE PROJECT, MONTICELLO KY	32700	65400
E CLINTON CNTY WATER PROJ, ALBANY KY	265000	530000
KY COAL MARKETING INFO SYSTEM	41455	82910
REGIONAL DROPOUT WORKSHOP	4292	4292
REGIONAL DROPOUT WORKSHOP	4293	4293
CORBIN WATER TREATMENT PLANT RENOVATION	92190	184381
MARROWBONE/GRAPEVINE WATER IMPROVEMENT PROJECT	500000	4225000
STANFORD/LINCOLN CO WATER SUPPLY PROJECT	400000	1892000
KY APPAL STUDENT DROPOUT PREVENTION PROG	430000	430000
KY APPAL STUDENT DROPOUT PREVENTION PROG	302750	833869
BATH COUNTY WATER EXTENSION	400000	1175000
FRONTIER NURSING HOSP STUDY	31000	31000
****** SUBTOTALS FOR - ST AT E = KY	4943193	20410314
MARYLAND		
MARYLAND APPALACHIAN STATE HOUSING PROGRAM	760000	760000
WRIGHT ROAD PUMPING STATEION IMPROVEMENTS	186006	372012
BOOSTER ZONE #3 STORAGE TANK	280500	561000
TRI-COUNTY CNCL REG.REVOLVING LOAN FUND	360200	360200
PINEY DAM CONSTRUCTION PROJECT	200000	6541200
****** SUBTOTALS FOR - ST AT E = MD	1786706	8594412
MISSISSIPPI		
NOXAPATER HEALTH CENTER PRG	23892	23892
MS CONSOLIDATED TECH AST PROGRAM	255000	510000
FALKNER SEWER PROJECT	184875	369750
MS CHILD CARE TECHNICAL ASST	72040	144080
NO MS MED CENTER OBSTETRICS EXPANSION	100000	200000
AMORY WATERFRONT PROPERTIES IMPROVEMENTS	625000	1284860
COMPUTER EQUIP PROJ	269000	540713
MS CORRIDOR AND TN-TOM WATER ACCESS PROJECTS	500000	500000
MS CORRIDOR AND TN-TOM WATER ACCESS PROJECTS	1500000	1500000
HOLLY SPRINGS WATER&SEWER IMPROVEMENT-PH.III	241000	386500
MITCHELL WATER SYSTEM IMPROVEMENTS	101500	203000
MACON SEWER IMPROVEMENTS	100000	200000

Name of Project	ARC Funds	Project Cost
MCDOWELL COUNTY INCUBATOR	76150	476150
MACON COUNTY BUSINESS INCUBATOR FACILITY	196838	497171
NC APPALACHIAN ST UNIV DROPOUT PREVENTION	100000	100000
****** SUBTOTALS FOR - ST AT E = NC	1791932	6016558
OHIO		
OHIO FY86 CONSOLIDATED WORK PROGRAM	61342	122684
OHIO'S CONSOLIDATED TECH ASST GRANT	50000	100000
OH MID-EASTERN GOVTS ASSOC-CHILD DEV(0707C-86)	102054	215388
OVRDC LOC DEV DST ADM + CONSOL ENT (0707C-86)	105000	214344
PIKE CNTY PRIMARY HLTH CARE CONST PROJ	65000	98172
BH-HV ENT DEV/COMM DEV/HSG/HUMAN RES/SF7070 Y1	108334	310195
PIKE COUNTY HEALTH COMPLEX	100000	371027
SEWER & WATER LINE EXT BOLIVAR INDUSTRIAL PARK	120000	240000
ATHENS CHEESEBARN ACCESS ROAD	17300	34600
OH COMPUTER TECHNOLOGY CENTER	25000	81386
COMPUTER AIDED DRAFTING SYSTEM WASH TECH COLL	30250	62801
TELECOMMUNICATIONS TRNG-HOCKING TECH COLLEGE	118750	237500
HARRISON COMMUNITY HOSP INF MORT RED	42875	98395
PIKE COUNTY INFANT MORTALITY	150000	243480
ROANOKE WATER SYSTEM IMPROVEMENTS	300000	600000
WOODSFIELD PRI CARE CLINIC EQUIP	27200	54400
CLERMONT/BROWN DAY CARE CENTER	277035	554070
JEFFERSON CNTY TECH COLLEGE'S JTPA REMEDIA PRG	14000	28100
OVRDC ENERGY CONSERVATION REV LOAN	500000	533500
PICKAWAY-ROSS CNTY VOCATIONAL CNTR DATA PROC	56000	190000
SCIOTO CNTY JVS AUTO UNIBODY TECH UPDATE EQUIP	19000	38123
WATER LINE EXTENSIONS,GINGER RDG RD/SKILLET RD	79200	98000
LINDA VISTA SANITARY SEWER EXTENSION	167600	209500
CLOW IMPROVEMENT PROJECT	190000	380000
AUTOMATED MANUFACTURING PROCESS TRAINING	80000	214902
PERRY COUNTY CHEESE CO ACCESS ROAD	35000	70000
TRI-COUNTY COMMUNITY ACTION DAY CARE	172455	380124
TAYLOR WOODCRAFT ENERGY CONVERSIONS	214500	511955
AMANDA BENT BOLT CO INFRA IMPRVMNTS	160000	865905
****** SUBTOTALS FOR - ST AT E = OH	3387895	7153553
PENNSYLVANIA		
PA CONSOLIDATED TECHNICAL ASSISTANCE	20000	20000
PA CONSOLIDATED TECHNICAL ASSISTANCE	15000	15000
PA CONSOLIDATED TECHNICAL ASSISTANCE GRANT	570000	1140000
NORTHWEST PA RPDC ENTERPRISE DEVELOPMENT PROG	328625	719625
SEDA-COG ENTERPRISE DEVELOPMENT PROGRAM	265000	530000
ECON DEVEL CNCL OF N.E. PA ENT DEV	290000	580000
S. ALLEGHENIES ENTERPRISE DEVELOPMENT PRG	250000	500000
NORTHERN TIER ENTERPRISE DEVELOPMENT PRG	29000	58000
NORTHERN TIER RPDC ENTERPRISE DEVELOPMENT PROG	89000	179000
SEDA-COG HOUSING REVOLVING LOAN FUND PRG	95000	190000
ECO DEV COUNCIL NE PA HSG REV LN	110000	220000
SHENANGO VALLEY PRI HLTH CARE CNTR	5000	20000
DUSHORE SEWER EXTENSION	161000	322000
SHENANGO PRI CARE CNTER, DENTAL	60000	120000
NORTHERN WAYNE CO PRIMARY CARE PROJECT	112500	266855
HARMONY TWP SEWAGE COLLECTION FACILITIES	163000	700000
1985 PA NEW FIRMS SURVEY, UNIV PA	50000	50200

Name of Project	ARC Funds	Project Cost
ABERDEEN WATERFRONT INDUSTRIAL PARK	400000	1250000
COLUMBUS-LOWNDES COUNTY RIVERPORT	250000	250000
COLUMBUS-LOWNDES COUNTY RIVERPORT	339000	678000
BENTON CNTY INDUSTRIAL PARK IMPROVEMENT	18000	30285
DEKALB INDUSTRIAL DEVELOPMENT	300000	650000
GUNTOWN WATER SYSTEM EXTENSION	82960	392500
ITAWAMBA JR COLL VOCATIONAL +TECH IMPRVMNT	80000	160000
GOLD TRI REP MED CNTR PERINATAL CARE	665000	1404125
MARIETTA WATER SYSTEM IMPROVEMENTS	113000	226000
ITAWAMBA/LEE INDUSTRIAL COMPLEX	250000	250000
ITAWAMBA/LEE INDUSTRIAL COMPLEX	514000	2724000
HOUSTON MS SCHOOL DROPOUT PREVENTION PROGRAM	25000	50000
REGIONAL REHABILITATION CTR,ROYAL MAID EXPANS.	20000	20000
REGIONAL REHABILITATION CT,ROYAL MAID EXPANS.	50000	133034
BROOKSVILLE/FAIRPORT WATER SYSTEM IMPRVMNT	152200	304500
****** SUBTOTALS FOR - ST AT E = MS		
	7231467	14385639
NEW YORK		
S TIER CENT REG ENERGY DEV REV LOAN	114596	114596
S TIER CENT REG ENERGY DEV REV LOAN	100000	100000
CONSOLIDATED TECH ASST. PROGRAM	255659	511318
BASIC SKILLS/COMPUTER AWARENESS PRJ	43409	87034
WAVERLY SEWAGE TREATMENT EXPANSN	75533	3006190
SENECA TRAIL RC+D LIVESTOCK INDUS DEVEL	79875	220400
LATTA BROOK IND PARK ACCESS ROAD	30000	60000
BROOME CNTY IND DEV AGENCY	372690	3800000
JAMESTOWN IND REN & MODERNIZATION PROG-PHASE I	150000	300000
DOWNSVILL/HANCOCK COMM HEALTH SYS	172964	430704
COMPUTER CONTROLLED EQUIP FOR TECH TRNG	75359	183317
EXPORT COORDINATOR PROG,CATTARAUGUS/ALLEG CO.S	34570	69140
TOWN OF LANSING WATERMAIN EXT TO IND	73900	147800
CORNING COMM COLLEGE BUS DEV CENTER CIM	101899	203798
ENHANCING LCC DEV:A MODEL PROG-IND SPEC. TRNG	69687	204235
VILLAGE OF DEPOSIT INDUSTRIAL WATER PROJ	166320	332640
INCUBATOR BUILDING IMPROVEMENTS,TOMPKINS	18500	66500
STEUBEN CNTY ARC SREEN + OFFSET PRINT SHOP	25104	50208
UNITED METH HOME CHILD CARE CENTER	81883	199176
DEVELOPMENT OF SITE FOR ESSEX STEEL CO.	318265	676865
CITY DUNKIRK WSTWTR TREATMENT PLANT IMPROVMNT	150000	750000
WATER IMPROVEMENT PROJECT, VILLAGE OF FREDONIA	130000	260000
S SCHOHARIE HEALTH CARE CLINIC	137643	280000
LIBERTY STREET RAILYARD INDUSTRIAL SITE PREP	180000	360000
****** SUBTOTALS FOR - ST AT E = NY		
	2957856	12413921
NORTH CAROLINA		
NC HOUSING FINANCE AGENCY	195351	195351
NC CONSOLIDATED TECH ASST GRANT	88100	176200
TOWN OF W.JEFFERSON WATER AND SEWER IMPROVTS	50000	100000
ANDREWS-CHEROKEE CNTY INDUSTRIAL DEV PROJECT	185000	655983
ROBBINSVILLE WASTEWTR TREATMENT PLANT EXPAN	200000	874000
ASHE COUNTY MATERNAL HEALTH PROJECT	41854	104634
MORGANTON INDUSTRIAL SEWER PROJECT	58639	117278
GRANITE FALLS INDUSTRIAL WATER+SEWER PROJ	200000	404300
TRYON WATER IMPROVEMENT PROJECT	200000	837391
MAGGIE VALLEY WSTWTR COLLECTION+TREATMENT	200000	1475100

Name of Project	ARC Funds	Project Cost
1985 PA NEW FIRMS SURVEY,'UNIV. OF PA	50000	50000
HOPEWELL INDUSTRIAL PARK,PHASE I	100000	500000
LOST CRK HEALTH SERVICES INC.	100000	214582
****** SUBTOTALS FOR - ST AT E = PA	2883125	6393062
SOUTH CAROLINA		
GAFFNEY INTERSTATE WATER TIE LINE	38619	77638
SC JOBS-ECON DEVEL AUTHORITY EXPORT PROG	75609	75609
SC JOBS-ECON DEVEL AUTHORITY EXPORT PROG	16911	16911
TOWN OF LYMAN-RIDGEVIEW CENTER SEWER LINE	87500	170500
OCONEE COUNTY MASON CAN-FLO SEWER	50000	102000
OCONEE COUNTY JACOBS MANUFACTURING SEWER	170000	345500
GAFFNEY WASTE SYSTEM FACILITIES IMPROVEMENTS	425000	2168320
SPARTANBURG TECH COLLEGE IND ELECTRONICS EQUIP	125000	250000
R D ANDERSON VOC CTR IND MECHANICS	25000	50000
TRI-CNTY TECH COLLEGE AUTOMATED MANU EQUIP	125000	250000
GREENVILLE TECH COLLEGE INSTRUCTIONAL EQUIP	215000	430000
ANDERSON CNTY 6 + 20 CREEK WASTEWATER IMPRCVMT	425000	2000000
ANDERSON NORTHWEST LIFT STATION UPGRADE	110000	220000
CLEMSON SEWERAGE TREATMENT PLANT IMPROVEMENTS	365000	1067000
NEWARK ELECTRONICS SEWER LINE	80000	170588
SENECA WATER SERVICE FOR ENGELHARD CORPORATION	325000	764000
OCONEE COUNTY-RICHLAND CREEK SEWER LINE	85155	191000
****** SUBTOTALS FOR - ST AT E = SC	2743994	8367066
TENNESSEE		
TN CONSOLIDATED TECH ASST GRANT	139000	278000
PIKEVILLE WATER SYSTEM IMPROVEMENT PROJ	60000	145129
GREENEVILLE-GREENE COUNTY VOCATIONAL CENTER	50000	104877
CATOOSA UTILITY DIST WATERLINE EXT	319200	605000
UPPER CUMBERLAND INFANT MORTALITY REDUCT PROJ	85352	170699
CLAY CNTY RURAL WATER LINE EXT	400000	900000
GRANDVIEW UTILITY DIST WATERLINE EXT	415000	1645000
NEW TAZEWELL SANITARY SEWER SERVICES EXTENSION	20000	40000
HAMILTON COUNTY INCUBATOR BLDG RENOVATION	500000	1133280
CHATTANOOGA STATE TECH COMM CLG COMPUTER AID	100000	200000
CARYVILLE/JACKSBORO EAGLE BLUFF EST WATWTR EXT	225000	450000
W. OVERTON UTILITY DIST HIGHLANDS EXT	137500	275000
CHANUTE/PALL MALL UTILITY DIST WATERLN EXT	269504	1440000
GATLINBURG AIRPORT ROAD WATER MAIN REPLACEMENT	104765	209531
LIVINGSTON SANITARY SEWER SYSTEM IMPROVEMENTS	109250	1140000
TN ENERGY INDUSTRIAL LOAN PROGRAM	505000	1010000
JASPER SEWER TREATMENT PLANT OUTFALL LINE	99000	198000
TN HANCOCK CNTY SCHOOL DIST DROPOUT PREVENTN	19192	19192
ATHENS WATERLINE EXTENSION	50974	108702
****** SUBTOTALS FOR - ST AT E = TN	3608737	10072410

Name of Project	ARC Funds	Project Cost
VIRGINIA		
VA CONSOLIDATED TECH ASST GRANT	13070	32856
JONESVILLE WATER PROJECT	159600	859600
GATE CITY SEWER SYSTEM IMPROVEMENTS PROJ	271500	625000
LEE CNTY SOLID WASTE COLLECTION PROJ	143520	182828
TAZEWELL CNTY ECON DEV(BLDFLD/DIV.WTR/SWR EXP)	500000	1078160
MT.EMPIRE INDUSTRIAL PARK/ATKINS AREA SEWER SR	500000	2052380
MTN EMPIRE COMM COLLEGE COOPRT CAREER DEV PROJ	16080	32160
MT EMPIRE CMMNTY COLLEGE COOP	30480	60960
APPALACHIA WATER SYSTEM IMPROVEMENTS	268000	536000
WYTHEVLL COMM CLG ALLIED HLH CONSORTIUM-S.W.VA	140213	280426
VA HIGHLANDS COMM COLLEGE COMPUTERIZED LATHE	35000	70000
HONAKER ECON DEVELOPMENT PROJECT	500000	2427300
BIG STONE GAP EMERGENCY WATER PROJ	140000	280000
PULASKI COUNTY INTERSTATE SEWER INTERCEPTOR	175000	415661
VULCAN STREET PUMP STATION REPLACEMENT	82500	165000
VA DEPT OF HEALTH MOTHERS PROJECT	60000	120000
****** SUBTOTALS FOR - ST AT E = VA	3034963	9218331
WEST VIRGINIA		
WV CONSOLIDATED TECH ASST PROGRAM	35519	71038
BARDANE IND PARK WATER SYSTEM IMPROVEMENTS	75000	150000
TUG FORK REPROGRAMMED FUNDS BLOCK GRANT	35133	43916
WV PHYSICIAN RECRUITMENT PROGRAM	43000	86000
CLOVER PUBLIC SERV WATER SYSTEM	72000	91500
MINNIE HAMILTON HEALTH CARE CNTR	56319	76255
PLEASANT CNTY INFANT MORT ASST.PROG	32202	64964
WV GEOLOGICAL&ECON SURVEY COAL SAMPLING PROG	24948	24948
INDUS PARK RAIL EXTENSION, GRANT CO	166623	333246
GRANTSVILLE SEWER SYSTEM IMPROVEMENTS	252000	321000
REEDY WASTEWATER TREATMENT PLANT	440000	1037000
CLAY CNTY INFANT MORTALITY PREVENTION PROJ	44000	55000
SOMMERS INFANT MORT REDUCTION	71000	112173
REDUCTION OF INFANT MORTALITY IN SUMMERS CNTY	16000	20000
INFANT MORTALITY REDUCTION PROJECT,RITCHIE CO	52593	105186
ROANE CNTY PRENATAL/FAMILY PLNG CASE MNGMNT	54286	108572
WEBSTER CNTY INFANT MORTALITY PROJECT	41827	52284
WEST VIRGINIA PRIMARY CARE STUDY GROUP	45000	90000
SUGAR CRK PSD WATER IMPROVEMENTS	238560	298200
ST. MARYS WATER IMPROVEMENTS	171000	342000
HILLSBORO WATER SYSTEM	502480	628100
CONTINENTAL BRICK CO. COAL CONVERSION	450000	900000
INFANT MORTALITY REDUCTION PROJ,POCAHONTAS CO	64656	82256
CHATTAROY HEALTH CENTER	150000	300000
WEST HAMLIN WATER EXTENSION	400000	500000
PENDLETON CNTY PSD WTR SYSTEM IMPROVEMENTS	548000	1760000
BRADSHAW WATER SYSTEM ACQUISITION/IMPROVEMENTS	400000	500000
CITY OF OAK HILL SHOPPING CTR SEWER EXT	209319	418638
WV SMALL RURAL HOSPITAL	468	468
WV SMALL RURAL HOSPITAL	34532	34532
WV APPALACHIAN STATE UNIV DROPOUT PREVENTION	23400	23400
****** SUBTOTALS FOR - ST AT E = WV	4749865	8630676
COMMISSION		
APP FOUNDATION/SCH DROPOUT PREV(S.302 $100000)	900000	900000
70001 LTD DROPOUT PREVENTION	42450	42450
KY APPAL STUDENT DROPOUT PREVENTION PROG	50000	50000
****** SUBTOTALS FOR - ST AT E = -C	992450	992450

PROJECTS PROPOSED FOR FUNDING FROM ADJUSTED JOBS AND PRIVATE INVESTMENT AND DISTRESSED COUNTY ALLOCATIONS

The project proposals listed below are contained in the state investment program for FY 1986. On adoption of the program by the Appalachian Regional Commission, these proposals will be eligible for consideration for Appalachian funding. Final approval of an individual project application is subject to the availability of funds and its conformance to the operating laws and policies of the Appalachian Regional Commission. Projects with no asterisks appear approvable under such laws and policies. Projects with single asterisks require additional information and those with two asterisks have unresolved issues, as set forth in the detailed staff review of the program.

ALABAMA

JOBS AND PRIVATE INVESTMENT	Estimated ARC Funds
Technical Assistance	
Alabama Consolidated Technical Assistance Grant, Multi County	$ 100,000
University Research Consortium/State of Alabama	100,000
Water, Sewer and Industrial Development	
Leeds Sewer System Improvements, Jefferson County	150,000
Athens Water and Sewer System Improvements, Limestone County	115,050
Scottsboro Water and Sewer System Improvements, Jackson County	200,000
Cummings Research Park Access Road (Huntsville), Madison County	247,746
Valley Head Water System Improvements, DeKalb County	100,000
Talladega Industrial Expansion, Talladega County	165,600
Greenbriar Industrial Park Improvements, Calhoun County	200,000
Tuscaloosa County Industrial Park Water and Sewer Facilities	150,000
Vinemont, Annon, Westpoint (VAW) Water System, Cullman County	200,000
Kennedy Water System Improvements, Lamar County	118,000
Education	
Muscle Shoals State Technical College, Multi County	200,000
University of North Alabama Education Mobility, Multi County	67,342
DISTRESSED COUNTIES	
Water and Sewer	
Goodwater Sewer System Improvements, Coosa County	154,500
George C. Wallace Industrial Air Park, Lawrence County	300,000
Brent Water System Improvements, Bibb County	10,900
Rockford Sewer System Improvements, Coosa County	200,000
Reform Water System Improvements, Pickens County	100,000
Northwest Blount County Water System Extension	200,000
Special Projects	
Haleyville Innovative Sewer, Winston County	$ 275,000
Poplar Springs/Curry Public Water System, Winston County	100,000
Jasper East Industrial Park, Phase II, Walker County	750,000
Signal Point Industrial Park, Marshall County	100,000
Walker College Continuing Education Program	1,950,000
Wallace State College Allied Health Professional Training Facility	1,200,000
Walker County Health Center	1,300,000
Berry Water System Improvement, Phase II & III	387,500

GEORGIA

JOBS AND PRIVATE INVESTMENT

Technical Assistance

Priority I

	Estimated ARC Funds
DCA Consolidated Technical Assistance, Multi County	$ 175,500

Water, Sewer and Industrial Development

Priority I

Adairsville Industrial Park, Bartow County	$ 288,500
Franklin/Heard County Water and Sewer System Improvements	200,000
Franklin Springs Water System Improvements, Franklin County	100,000
Paulding County Water and Sewer System Expansion	200,000
Cherokee County Water System Improvements	200,000
Cumming Water System Improvements, Forsyth County	200,000

Priority II

Cherokee County Industrial Park	$ 200,000
Gwinnett County Progress Center Water and Sewer Lines	200,000
Clayton Water and Sewer System Improvements, Rabun County	200,000
Chatsworth Sewer System Improvements, Murray County **	200,000

Priority III

Hall County Wastewater Treatment Facility **	$ 200,000
Cleveland Sewer System Improvements, White County **	200,000
Possum Trot Industrial Park (Rome), Floyd County **	200,000

Other

Heard County Day Care Center **	$ 75,000
Towns County Emergency Medical Communications **	50,989

DISTRESSED COUNTIES

Priority I

Blairsville Wastewater Treatment Facility, Union County	$ 200,000

Priority II

Hiawassee Water System Improvements, Towns County **	$ 200,000

KENTUCKY

JOBS AND PRIVATE INVESTMENT

	Estimated ARC Funds
Berea Sewers Overrun, Madison County (9171) **	$ 43,096
Pikeville, Yorktown Sewers, Pike County (9422)	200,000
Paintsville Sewers, Johnson County (9427) **	91,302
Russell Springs Regional Vegetable Co-op, Russell County (9453)	115,000
Mud Creek Water Improvements, Floyd County (9451)	196,600
Molding Unlimited, Vanceburg-Lewis County Industrial Authority *	215,000
Greenup Sewers, Greenup County *	25,000
Ashland (Kings Daughter's Medical Center) Storm Water Separation, Boyd County *	228,723
Pikeville Sewers, Pikeville Pond, Pike County *	200,000
Hyden Wastewater Improvements, Leslie County	100,000
Jackson-Quicksand Sewers, Breathitt County *	68,000
Mt. Vernon Water, Rockcastle County	150,000
Lancaster Wastewater, Garrard County *	400,000
Kentucky Appalachian Housing Program, Regional	1,540,000
Kentucky Consolidated Technical Assistance Grant (Downtown Revitalization), Regional	150,000

DISTRESSED COUNTIES

Hilltop Water Extensions, Western Fleming Water District, Fleming County (9418)	$ 200,000
Stanton Wastewater, Powell County (9421)	90,101
Jenkins Water, Letcher County (9424)	309,000
Louisa, Eloise Sewers, Lawrence County (9426)	235,000
Vanceburg Water and Sewers, Lewis County	300,000
Fleming County Water, Fleming County Water Association	200,000
Lewis County Solid Waste	59,720
West Liberty Sewers, Morgan County	304,200
Menifee County (Dan Ridge) Water	150,000
Bath County Water	50,000
Ezel-West Morgan Water, Morgan County	303,325
Grayson, Fourth Street Development, Carter County	31,282
Magoffin County Water	330,000
Campton-Hazel Green Water, Wolfe County	100,000
St. Helens Water Line, City of Beattyville, Lee County	100,000
Knott County Solid Waste	65,000
Clay County Solid Waste	185,000
Manchester Sewers, Clay County	200,000
McKee (McCammon Ridge) Water, Jackson County	162,265
Jackson County Water	300,000
Williamsburg Sewers, Whitley County	341,800
Liberty Sewers, Casey County	300,000
Russell Springs Sewers, Russell County	300,000
Jamestown Water Tank, Russell County	125,000
Stanford Sanitary Sewers, Lincoln County	32,755
Clay City Sewers, Powell County	100,000
Estill County Sewers	475,000

MARYLAND

JOBS AND PRIVATE INVESTMENT

Water, Sewer and Industrial Enterprise Development

70/81 Industrial Park Rail Line, Washington County (MD-9095)	$ 320,565
CITICORP Water and Sewer Facilities, Washington County	285,000
Garrett County Airport Terminal Improvements **	342,500

MARYLAND

	Estimated ARC Funds
Washington County Industrial Air Park **	800,000
Downtown Hagerstown Improvements, Washington County	200,000
Ober Wisp Ski Lodge Sewer Extension, Garrett County	57,500
Savage River White Water Site Development, Garrett County **	130,000
Business and Industrial Development, Energy Revolving Loan Fund Recapitalization, Multi County	500,000
Westernport Water System Improvements, Allegany County (MD-9137) **	425,000

Housing

Maryland Appalachian Housing Fund Recapitalization, Multi County	$ 705,000

MISSISSIPPI

JOBS AND PRIVATE INVESTMENT

Regional Projects

Mississippi Consolidated Technical Assistance Program	$ 175,000
Northeast Mississippi Horticulture Cooperative Demonstration	250,000
Intensifying Forestry Management and Forestry Market Development in Northeast Mississippi **	93,350

Northeast Mississippi Planning and Development District

Holly Springs/Marshall County Industrial Park Access Road	$ 70,000
Booneville-Prentiss County Industrial Park Improvements	129,000
Byhalia Industrial Water Improvements, Marshall County	75,000

Three Rivers Planning and Development District

Northeast Mississippi Distressed Counties and Economic Development Loan Program	$ 700,000
North Mississippi Appalachian Loan Program	500,000
Okolona Industrial Park, Chickasaw County	350,000
Swine Buying Station - Itawamba County	70,000
Tupelo Water System Improvements, Lee County	400,000
Assessment and Evaluation Program, Pontotoc County School District	57,424
Itawamba Junior College Industry and Education Video Lab, Tupelo Campus, Lee County	55,525
Itawamba Junior College Microcomputer Lab, Fulton, Itawamba County	21,891
Itawamba Junior College Business Education Microcomputer Lab, Tupelo Campus, Lee County	32,595
Itawamba Junior College Cooperative Education Study, Fulton Itawamba County	1,095
Turner Industrial Park Site Improvements, Lee County	200,000
Itawamba/Lee Industrial Complex, Phase II	1,000,000
Harbor House, Tupelo, Lee County	100,000

Golden Triangle Planning and Development District

Riverside Industrial Park, Phase II, Columbus, Lowndes County	$ 3,000,000
Tibbee Industrial Park Water Distribution System Improvements, West Point, Clay County	288,500
Mississippi Research and Technology Park Development, Starkville, Oktibbeha County	262,000

	Estimated ARC Funds
Golden Triangle Vocational-Technical Center Electronics Laboratory Equipment, Lowndes County	25,000
Golden Triangle Dropout Intervention Project, Mississippi State University Division of Continuing Education	63,550
Columbus-Lowndes Memorial Computer Laboratory, Mississippi University for Women	65,000

DISTRESSED COUNTIES

Northeast Mississippi Planning and Development District

Murry Spur Water Improvements, Tippah County	$ 169,800
Black Jack Water System, Benton County	263,500
Ripley Annexation Sewer Extensions, Tippah County	300,000

Golden Triangle Planning and Development District

Shuqualak-Butler Water System Improvements, Noxubee County	$ 127,500
Pugh's Mill Water Association Well Construction, Winston County	40,000
Pilgrim Rest Area Water System Extension, Noxubee County	93,000
Southeast Noxubee Water Association Water System Construction, Noxubee County	151,083
Liberty-Plattsburg Water Association System Improvements, Winston County	210,000

East Central Planning and Development District

Scooba Sewer System Improvements, Kemper County	$ 250,000
Porterville Water Association Line Extension, Kemper County	100,000

NEW YORK

JOBS AND PRIVATE INVESTMENT

Technical Assistance

Priority I

Consolidated Technical Assistance Program, Multi County	$ 200,000

Water, Sewer and Industrial/Commercial Development

Priority I

Olean Industrial Park Improvements, Cattaraugus County	$ 120,000
Cattaraugus County Industrial Waste Disposal	105,000
Montour Falls Wastewater Treatment Facility, Schuyler County	65,000
Watkins Glen Lakefront Interceptor, Schuyler County	74,000
Ithaca Industrial Park, Tompkins County	150,000
Expressway Industrial Park (Waverly), Tioga County	107,500
Norwich Downtown Improvements Program, Chenango County (NY-9420)	150,000

Priority IA

Middletown Industrial Park Water and Sewer Facilities, Delaware County	$ 150,000
Collegetown Redevelopment (Ithaca), Tompkins County	143,786

	Estimated ARC Funds
Priority II	
Sherburne Water Storage System, Chenango County	$ 150,000
Brown Street Extension, Otsego County Industrial Development Authority	150,000
Enterprise Development	
Priority I	
Revolving Loan Fund for Enterprise Development, Multi County *	$ 100,000
Defense Procurement and Government Contracts Technical Assistance, Cattaraugus and Allegany Counties **	33,000
Southern Tier Central Phase II Marketing Study, Multi County	13,125
Pony Farm Industrial Incubator, Otsego County **	130,000
Marketing Program for Service Industries, Multi County (NY-9397)	20,000
Priority IA	
Regional Kiln Drying Facility and Industrial Co-Generation, Cattaraugus County *	$ 98,000
Wood Utilization for Energy, Multi County *	50,000
Regional Energy Development Corporation (REDEC) Recapitalization, Multi County	100,000
Grassland Management Program (STC), Multi County	99,900
Biggs Center Enterprise Incubator, Tompkins County	129,000
Priority II	
Senior Crafts Project, Chattauqua County	$ 24,600
Grape Marketing Project, Schuyler County	15,000
Manpower Training and Basic Skills	
Priority I	
Mature Industries Training Initiative (STW), Multi County **	$ 150,000
Toshiba-Westinghouse Electronics Employee Training, Chemung County *	150,000
S.H.A.P.E. Learning LAB Project, Steuben County **	13,000
Upgrading Electro-Optics Skills (STE), Multi County	32,000
Priority IA	
Broome-Chenango Alternative High School, Multi County *	$ 35,000
Priority II	
Cattaraugus-Allegany BOCES Equipment Upgrading	$ 139,360
Wood Processing and Secretarial Science Automated Office Systems (STC), Multi County	112,800
Learning Web-Youth Managed Ice Cream Business, Tompkins County	17,220
Broome-Tioga-Delaware BOCES Adult Basic Skills, Multi County	108,945
Hancock Central School Adult Education Consortium, Delaware County	2,902
Housing	
Priority I	
Recapitalization of Appalachian Housing Fund, Multi County (NY-8907)	$ 140,000

	Estimated ARC Funds

Other

Priority I

Bethany Center Child Day Care, Chemung County	$ 59,217

Priority II

Schuyler County Recycling Center	$ 15,000

NORTH CAROLINA

JOBS AND PRIVATE INVESTMENT

Canton Water Storage and System Improvements, Haywood County	$ 200,000
Clyde Wastewater Treatment Plant Expansion, Haywood County	167,532
Haywood County-Junaluska Sanitary District Interceptor Line, Pump Station and Force Main Project	200,000
Lenior Wastewater Treatment Improvements, Caldwell County	200,000
Macon County 441 South Water and Sewer Extensions	80,233
Marion Water Storage Improvements, McDowell County	200,000
Mars Hill Water Supply Improvements, Madison County	100,000
McDowell County Sewer Improvements	200,000
Consolidated Work Program, Department of Administration	185,000

DISTRESSED COUNTIES

Clay County Industrial Sewer	$ 145,418
Jefferson Sewer Expansion, Ashe County	300,000
Murphy Sewer Treatment Expansion, Cherokee County	200,000

OHIO

JOBS AND PRIVATE INVESTMENT

Priority I

New Philadelphia Mall Utilities Improvement Project Tuscarawas County	$ 110,000
Cronacher Hill Shopping Center Site Development, Ironton, Lawrence County	396,000
Muskingum River Marina, Marietta, Washington County	60,000
Village of Byesville Northerly Trunk Water Main, Guernsey County **	150,000
Bolivar Industrial Park Sewer Line, Tuscarawas County	49,075
Child Focus Child Care Operations, Clermont County	135,000
Oil Mining Research Demonstration Project, Macksburg Area of Washington and Noble Counties **	300,000
OVRDC Consolidated Work Program *	105,000
BH-HVRDD Consolidated Work Program *	105,000
OMEGA Consolidated Work Program *	105,000
State of Ohio Consolidated Work Program *	61,342
Hocking Technical College Industrial Compressor Training, Nelsonville	150,000
Jefferson Tech-Robotics Technology Lab Equipment, Steubenville	55,000

Priority II

	Estimated ARC Funds
Ohio River Historic Plaza and Levee Restoration, Marietta, Washington County	$ 67,500
Chillicothe Streetscapes Project, Ross County	400,000
Development of Industrial Park in Millersburg, Holmes County	179,750
Jackson Commercial Site Development Access Road, Jackson County	513,000
Computer Aided Drafting and Design, Muskingum JVS, Zanesville	160,000
Demonstration Appalachian Wood Products, Ohio Appalachia **	31,200
Ohio Valley Incubator Building Energy Related Innovations, Ironton, Lawrence County **	125,000
Child Development Center of Wellston, Jackson and Vinton Counties	300,450

DISTRESSED COUNTIES

Priority I

Liberty Township Hale Drive Sewer Line, Adams County	$ 120,000

Priority II

Morgan Fork Water Line Extensions, Pike County	$ 264,800

PENNSYLVANIA

JOBS AND PRIVATE INVESTMENT

Technical Assistance

Consolidated Technical Assistance Program	$ 600,000
Appalachian Export Program, Multi County *	500,000
Appalachian Enterprise Development Institute, Multi County *	500,000
Ben Franklin Partnership Advanced Technology Program, Multi County *	500,000

Enterprise Development Regional Programs

SEDA-COG Enterprise Development Program	$ 435,000
N.C. Pennsylvania Enterprise Development Program	135,000
N.W. Pennsylvania Enterprise Development Program	435,000
Southern Alleghenies Enterprise Development Program	343,000
N.E. Pennsylvania Enterprise Development Program	435,000
Northern Tier Enterprise Development Program	135,000
S.W. Pennsylvania Enterprise Development Program	350,000

Enterprise Development Revolving Loan Programs

SEDA-COG Regional Enterprise Development Revolving Loan Program *	$ 300,000
N.C. Pennsylvania Regional Enterprise Development Revolving Loan Program *	300,000
N.W. Pennsylvania Regional Enterprise Development Revolving Loan Program*	300,000
Southern Alleghenies Regional Enterprise Development Revolving Loan Program *	300,000
N.E. Pennsylvania Regional Enterprise Development Revolving Loan Program *	300,000
Northern Tier Regional Enterprise Development Revolving Loan Program*	300,000
S.W. Pennsylvania Regional Enterprise Development Revolving Loan Program *	300,000

	Estimated ARC Funds
Industrial Sites	
Hopewell Township Industrial Park (Phase II), Beaver County *	$ 150,000
Washington County Industrial Park	82,000
Steigmaier Brewery Infrastructure Project, Luzerne County *	500,000
Water and Sewer	
Jay Township Water System, Elk County **	$ 100,000
Houtzdale Borough Water System, Clearfield County **	100,000
Rochester Township Industrial Sewer, Beaver County *	100,000
Community Revitalization	
Wilkes-Barre Downtown Revitalization Program, Luzerne County *	$ 500,000
Manpower Training	
Sun Area Vocational-Technical School Equipment, Multi County	$ 40,000
Housing	
Housing Revolving Loan Fund	$ 110,000
Transportation	
SEDA-COG Rail Line Preservation and Development, Multi County	$ 48,000
Venango Area Industrial Complex Rail Spur, Venango County *	60,000
Venango County Rail Line Rehabilitation *	150,000
SOUTH CAROLINA	
JOBS AND PRIVATE INVESTMENT	
Manpower Training	
Greenville TEC Machine Tool Technology Equipment, Greenville County	$ 197,700
Spartanburg TEC Computer Integrated Manufacturing Equipment, Spartanburg and Cherokee Counties	163,565
Tri-County TEC Mechanical Support Lab Equipment, Anderson, Pickens and Oconee Counties	173,132
Spartanburg TEC Computer Programming Equipment, Spartanburg and Cherokee Counties	35,159
Tri-County TEC Business Training Center Equipment Anderson, Pickens and Oconee Counties	128,786
Infrastructure and Technical Assistance	
Lyman US 29/I-85 Industrial Sewer, Spartanburg Sewer	$ 131,000
Fabriyaz Sewer Line, Gaffney, Cherokee County	131,994
Town of Pelzer Sewer Improvements, Anderson County	80,000
Entrepeneurial Financing Strategy, Phase II *	40,000
Anderson County Highway 81/I-85 Water and Sewer *	500,000
Orian Rugs Water and Sewer, Anderson County *	250,000
Kingspoint Mill Sewer, Spartanburg Sewer District, Spartanburg County *	135,000
Iva Sewer Improvements, Anderson County *	58,000
Williamston Sewer Improvements, Anderson County *	200,000
Cateechee Sewer Improvements, Pickens County *	30,000
Landrum Sewer Improvements, Spartanburg County *	100,000

	Estimated ARC Funds
Pickens County Sewer Improvements *	75,000
Spartanburg County Industrial Sewer Line *	100,000
Andesron County Highway 81/187 Water *	200,000

TENNESSEE

JOBS AND PRIVATE INVESTMENT

Technical Assistance

Consolidated Technical Assistance Grant	$ 145,000

Industrial Development

Tellico Plains Water and Sewer Improvements, Monroe County	$ 275,000
Pigeon Forge Water Line Extensions, Sevier County	57,886
Monroe County Water Line Relocation	225,000
Manchester Wastewater System Improvements, Coffee County	500,000
Dayton Sewer System Improvements, Rhea County	500,000
Tri-County Railroad Authority, Coffee, Warren and White Counties	250,000
Cookeville Industrial Location, Putnam County	500,000
Bristol Waste Water Treatment, Sullivan County (TN-9400)	794,407
Gainesboro Industrial Location, Jackson County *	225,000
West Knox Utility District Sewer Line Extension, Knox County	200,000

OTHER

Central South River Port Industrial Park	$4,000,000
Child Care Assistance Service for Employees, Multi County	49,600

DISTRESSED COUNTIES

Water and Sewer

Tracey City Water System Improvements, Grundy County	$ 387,500
Sweetwater Sewer System Extension Program, Monroe County	140,000
Cove Creek Rural Water Line, Pickett County	180,000
Lantana Utility District Water Line Extensions, Cumberland County	500,000
LaFollette Sewer System Extensions, Campbell County	131,131
East Fork Utility District (Crawford/Crossroads) Water Line Extension, Overton County	290,000
Decatur Water Line Extensions, Meigs County	397,500
Celina Sewer System Rehabilitation, Clay County	200,000
Spencer Water Works Improvements, Van Buren County (TN-9330)	225,000
Walden Ridge Water System, Bledsoe County	500,000
Clearfork Utility District Water Line Extension, Claiborne County	30,000

VIRGINIA

JOBS AND PRIVATE INVESTMENT

GROUP NO. 1

Technical Assistance

Virginia Consolidated Work Program	$ 6,000

GROUP NO. 2

Priority Number		
1	Bradford Lane Utilities, Buchanan County *	$ 500,000

		Estimated ARC Funds
2	Bristol Combined Sewer Separation Project	500,000
3	Grahams Forge Water, Wythe County	99,000
4	Craig-New Castle Wastewater Improvements, Craig County **	90,900
5	Norton Water Improvements	250,000
6	Wise County Regional Water System	500,000
7	Independence Water System, Grayson County	250,000
8	Tazewell County Economic Development (Wardell Industrial Park Improvements)	500,000
9	Virginia Highlands Community College Multi-Use Computer Equipment	50,000
10	Wytheville Community College CAD,CNC, and CAM Equipment	50,450
11	Western Lee Water Project	78,050
12	Covington Wastewater Treatment **	500,000
13	Eagle Rock Wastewater System, Botetourt County **	40,240
14	Virginia Intermont College Multi-Use Computer Equipment **	28,500
15	Mountain Empire Community College Nursing Instructional Equipment	39,280
16	Dungannon Central Sewer, Scott County	226,500
17	Southwest Virginia Community College Vocational Equipment	108,975
18	Dabney-S. Lancaster Community College Vocational Equipment	100,000
19	New River Community College Vocational Equipment	60,000
20	LENOWISCO Computer System **	7,500
21	Southwest Virginia Community College Business Incubators Feasibility Study and Start-up	149,366
22	Virginia Coal Council Support **	70,000
23	Botetourt County Adult and Secondary Level Youth Job Relevant Training and Basic Skills Instruction Program	87,500

WEST VIRGINIA

JOBS AND PRIVATE INVESTMENT

Preston County Academic Center (9447)	$ 425,000
Jane Lew PSD Water and Sewer Line Extensions, Lewis County (9298)*	138,260
WV-Rocky Gap, VA Tourist Information Center *	125,000
Pence Springs Resort Water and Sewer Systems, Summers County (9299) **	398,000
Marion County Route 73 Sewer Line Overrun **	26,000
West Virginia Consolidated Technical Assistance Grant	38,000
Moorefield Water System Improvements, Hardy County	300,000
Cairo Water System Improvements, Ritchie County	167,000
Frankfort PSD Water System Improvements, Mineral County **	750,000
Parkersburg Community College Retraining and Upgrading Skills Program, Multi County	98,900
Improving Computer Literacy, Final Phase, Multi County	361,226
Allegheny Mountain Wool Co-op, Randolph County **	800,000
Entrepreneurial Outreach Program, Multi County *	25,450

DISTRESSED COUNTIES

Miletree Run Dams Renovation/City of Spencer, Roane County	$ 448,000
Coon Knob Water Extension, Braxton County	707,040
Little Otter Water Line Extension, Braxton County	453,600
Hinton Solid Waste Transfer Station, Summers County	48,263

HIGHWAY PROJECTS FUNDED IN 1985 AND PLANNED FOR 1986

I. 1985 Highway projects funded:

Part A of the table shows for Development Highway projects, the following: the State Corridor and segment, location, type of work, miles involved and ARC funds obligated. Part B shows for Access Roads of State, the ARC project number, county, project title, type of work, miles and ARC funds obligated.

A. Development Highways 1985:

	Corridor & Cost Estimate Section	Description	Work Type	Miles	ARC Funds ($1,000)
AL					
	VB 17-18	CR46 NE Mod Cr to Stevenson	ROW	5.7	$ 4,020
	VB 16.1-17	Mud Creek Bridge	CON	0.1	636
	A2-B1	Chestnut Gr. CH S. Hamilton to US-43	ROW	8.0	2,381
	XB1-C1	US-43 to US-78 W Jaspen	PE	38.4	659
	XB1-C1	US-43 to US-78 W Jaspen	ROW	38.4	4,968
	Project Adjustments				-466
	TOTAL				$ 12,198
GA	Convert Prefinance work				$ 82
KY					
	B 10.2-11.1	Pikeville Cut-Thru-Paving	CON	1.2	2,800
	B 8.2-10	Robinson Cr. to N. Shelbiana	ROW	5.3	3,214
	Convert Prefinance and Project Adjustments				3,959
	TOTAL				$ 9,973
MD	Convert Prefinance work & Project Adjustments				$ 4,573
MS					
	V 6.0-6.1	E. of Pontotoc Co. Line to SR 15	ROW	5.5	908
	X 1.1-4.0	Bull Mt. Bottom to AL State Line	CON	5.5	5,891
	Project Adjustments				453
	TOTAL				$ 7,252
NY	Convert Prefinance & Project Adjustments				$ 7,351
NC	Adjustments to Projects				$ 2,655
OH	Convert Prefinance & Project Adjustments				$ 960
PA					
	T 2.0-2.1	SR-89 Interchange	CON	1.25	3,066
	O 16.6-16.7	S. Newry to N. Newry	CON	0.9	3,999
	Project Adjustments				538
	TOTAL				$ 7,603
SC					
	W 0.2-2.1	Short St. - Near Rt. 123	ROW CON	0.6	634
	Project Adjustments				525
	TOTAL				$ 1,159

	Corridor & Cost Estimate Section	Description	Work Type	Miles	ARC Funds ($1,000)
TN	J 1.1-2.2	Morrison Spr. Rd.- Levi Cem. Rd.	CON	4.5	2,963
	J 4.0-4.1	Soddy to SR-29-Paving	CON	1.2	1,133
	Convert Prefinance Work & Project Adjustments				3,871
	TOTAL				$ 7,967
VA	B 15.1-15.2	Slide Correction S. Norton	P.E.	1.6	1,200
	Project Adjustments				8,92
	TOTAL				$ 2,092
WV	G 27.0-28.0	Ruth to Davis Cr.-Paving	CON	2.6	3,718
	G 10-0-15.0	Holden Br. to Goodby Heights	P.E.	12.0	9,752
	Project Adjustments				-717
	TOTAL				$ 12,753
	Total Obligated - FY 1985				$ 76,618

B. Access Roads 1985:

	ARC Number	County	Description	Work Type	Miles	ARC Funds ($1,000)
AL	9206	Cleburne, Clay, Talladega	Talladega Scenic Access Rd.	PE	32.4	$ 1,000
	8973	Pickens	Ind. Access Rd Turning Lanes	CON	0.3	84
	8972	Pickens	Aliceville Ind. Pk.	CON	0.3	157
	8953	Limestone	Sanderfer Rd.	PE	1.2	46
				CON		424
		Project Adjustments				3
		TOTALS				$ 1,714
GA		Project Adjustments				$ 82
KY		Project Adjustments				$ 6
MD	8172	Allegany	Mexico Farms Ind. Rd.	CON	0.8	$ 302
MS	8298	Lee	Tupelo-Lee Ind.Pk.	CON	0.6	644
	8300	Lee	Tupelo-Appal. Access Rd.	CON	1.6	744
		Project Adjustments				757
		TOTALS				$ 2,447
NY		None				-0-
NC		Project Adjustments				5

	ARC Number	County	Description	Work Type	Miles	ARC Funds ($1,000)
OH	9090	Washington	Selby Gen. Hosp. Access Rd.	CON	0.1	58
		Project Adjustments				84
		TOTALS				$ 142
PA	8364	Centre	Bellefonte St. Ind. Park	CON	0.4	188
	9124	Crawford	Ext. Sycamore St. Meadville	CON	0.4	100
		Project Adjustments				208
		TOTALS				$ 80
SC	8946	Oconee	SC-28 to SC-11	CON	1.7	147
		Project Adjustments				26
		TOTALS				$ 121
TN		Project Adjustments				$ 68
VA	7600	Scott	Rt. 614 to Rt.58	CON	0.3	500
		Project Adjustments				141
		TOTALS				$ 359
WV	8968	Monogalia	Westover Ind. Rd.	PE	1.1	19
	8992	Marion	Industrial Resources Road	PE & ROW	0.1	132
		Project Adjustments				15
		TOTALS				$ 136
		TOTAL OBLIGATED - FY 1985				$ 5,275

II. Planned 1986 Highway Program.

The following table shows, by State, the development highway and access road projects identified by the States for work in 1986. The planned projects, in most cases, exceed the ARC funding available. The States will determine priority within funds available depending on status of prior highway work and final availability of ARC funds.

A. Development Highway Program 1986:

	Corridor & Cost Estimate Section	Description	Work Type	Miles	ARC Funds ($1,000)
AL					
	VB 16.1-17.0	E of CR-33 to CR-46 NE Mudcr.	Stage CON	(5.2)	3,776
	VB17.0-18	C-46 to Stevenson	CON	7.0	7,183
	XA 2.1-B1.0	NSR-19 to US-43 S. Hamilton	CON	7.0	17,721
	XB 1.0-3.0	US-43 to SR-44 Brillant	ROW	10.7	713
	TOTALS				$ 29,393

	Corridor & Cost Estimate Section	Description	Work Type	Miles	ARC Funds ($1,000)
GA	Convert Prefinanced Work				
KY	Convert Prefinanced Work				
MD	E 54.1-54.5	South Rd. to Sideling Hill Cr. Br.	Stage CON	(2.6)	$ 9,924
MS	V 3.0-5.0	ECL Oxford to Powtotoc C.L.	PE	15.3	540
	V 5.0-8.1	Lafayette-Pontotoc Line to US-78	PE	(24.7)	901
			ROW		1,192
	V 11.5-12.1	SR-25S to US-78 E Fulton	Stage CON	(5.1)	3,600
			ROW		322
	V12.1-12.11	US-78 to SR-25 Connector	ROW		375
			CON	3.9	4,125
	V12.11-13.0	SR-25 Connector to AL State Line	ROW	10.8	1,200
	V 12.2-13.0	SR-23 to AL State Line	CON	2.3	3,375
	X 1.0 - 1.1	Corr."V" to Bull Mt. Bottom	CON		4,500
	TOTALS				$ 20,130
NY	Convert Prefinance Work				
NC	Adjustments to Projects				
OH	Convert Prefinance Work				
PA	N 19.4-19.5	Interchange TWP Rd. 753	PE		50
			ROW	0.0	140
			CON		2,500
	N 21.4-21.5	Interchange TWP Rd. 417	PE		62
			ROW	0.0	108
			CON		2,080
	O 14.0-15.0	Bedford CL to Claysburg	CON	2.9	6,264
	T 2.0-3.0	SR-89 to NY St. Line	CON	3.7	11,147
	U 1.2-3.0	LR41033 to LR41029	ROW	3.3	5,200
	U 3.0-4.0	LR41029 to LR41044	ROW	2.7	1,147
	U 4.0-5.0	LR41044 to Penn. RR	PE	5.0	1,543
			ROW		1,000
	TOTALS				$ 31,241
SC	W 0.02-0.03	SC-81 to Short St.	Stage CON	(0.7)	308
	W 0.1-0.2	Maxie Ave. to Eddie Rd.	PE	1.3	500
	W 0.03-0.04	Short St. to Near SR 123	Stage CON	(0.6)	199
	TOTALS				$ 1,007

	Corridor & Cost Estimate Section	Description	Work Type	Miles	ARC Funds ($1,000)
TN	J1.0-3.0	SR-8 to SR-153	Stage CON	(8.0)	$ 15,112
VA	B 15.1-16.1	Slide Correction S of Newton	Stage CON	(1.6)	$ 18,400
WV	G 1.0-1.1	Williamson Br to US-52	CON	0.5	8,000
	G 20.1-22.1	Danville to Van Camp	CON	2.6	25,400
	Q 1.0-9.0	Va St. Line to Princeton (Drainage)	CON	(9.0)	1,360
	TOTALS				$ 34,760
	Regional Total (Capability) plus $152 million prefinanced				$ 159,967

B. Access Road Program 1986:

	ARC Number	County	Description	Work Type	Miles	ARC Funds ($1,000)
AL	8953	Limestone	Athens Ind. Acc.Rd.	CON	1.2	172
	8974	Walker	Co Rd 20 Br. Culvert	CON	0.1	52
	8975	Walker	Co Rd 22	CON	0.1	106
	9215	Talladega	CR5-I-20 to US-78	CON	0.1	80
	TOTALS					$ 410
GA	None					
KY	None					
MD	8172	Allegany	Meixco Farms Rd	Stage CON	(0.8)	40
		Washington	CITICORP Acc.Rd.	CON		160
		Garrett	Wisp Access Rd.	CON		216
	TOTALS					$ 416
MS	5937	Prentiss	Baldwyn Ind. Pk.	CON		$ 11
NY	None					
NC	7648	Buncombe	Farmers Market	CON	1.0	$ 2,025
OH	8535	Athens	Athens Station Redevelopment	CON	0.40	379
		Tuscarawas	New Philadelphia Pk.	CON		500
		Tuscarawas	Bolivar Ind. Pk.	CON		350
	TOTALS					$ 1,229

	ARC Number	County	Description	Work Type	Miles	ARC Funds ($1,000)
PA	8991	Somerset	Gilmour Ave.	CON	0.4	292
	9054	Erie	Thomas E. Bundy	CON	0.1	125
	9062	Mercer	Hermitage R&D	Con	0.1	76
	9121	Allegheny	N. Versailles	CON	0.2	100
		Juniata	Empire Kosher Rd. Reloc.	CON		200
		McKean	Allegheny Particle Board	CON		100
		Clearfield	Wolf Run Ind.Pk.	CON		75
	TOTALS					$ 948
SC	8221	Anderson	Clemson Ind.Pk.	CON	1.52	911
	8965	Greenville	Rocky Slope - Slater Rd.	CON	1.74	130
	TOTALS					$ 1,041
TN	None					
VA	7943	Wise	Lonesome Pine - Rt. 646	CON	2.0	500
	8658	Scott	Duffield Ind.Pk.	CON	0.5	159
	9098	Scott	Duffield Ind.Pk.Br.	CON	0.1	105
	9277	Wise	Big Stone Gap Ind.	CON	0.8	59
		Buchanan	Bradford Lane Acc.	CON		500
	TOTALS					$ 1,323
WV	8968	Monogalia	Westover Ind. Pk.	CON	1.1	382
	8992	Marion	Ind. Res. Access	CON	0.1	48
	9435	Wood	Dupont Warehouse Wash.	CON	.2	221
	8582	Mineral	Beryle Bridge - overrun	CON	0.1	161
		Marion	Kingmont Interchange Access Rd.	CON		320
		Berkeley	Variform Inc. Acc.Rd.	CON		200
	TOTALS					$ 1,332
	REGIONAL TOTALS					$ 8,735

HIGHWAY PROGRAM

Mr. Bevill. What is the status of the highway program?

Mr. Pizzano. We have placed under contract 1,982 miles or 80 percent of the revised plan under the Governor's finish-up program. Of this amount 1,861 miles have been completed. An additional 26 miles are in the right-of-way acquisition stage and 64 miles in engineering design for a total of 2,564 miles. By the end of 1986 we expect to have about 2,010 miles under construction or completed.

[The following was provided for the record:]

STATUS AND CAPABILITIES OF CORRIDORS "V" AND "X"

1. Status:

CORRIDOR "V":	Alabama	Mississippi	Total
Total Miles	155.5	110.3	265.8
Construction Required	146.2	107.3	253.5
Eligible Under Revised Plan	110.5	76.4	186.9
Under Construction or Completed	89.3	51.8	141.1
Under R.O.W.	5.7	20.1	25.3
Under Design	51.2	20.1	71.3
Total Through Design	146.2	92.0	238.2
Location Study Completed		15.3	15.3

Note: Mississippi has scheduled construction for 6.2 miles of the 12.4-mile section from US 78 East of Fulton to SR 23 on this corridor in 1986.

CORRIDOR "X":	Alabama	Mississippi	Total
Total Miles & Construction Required	98.0	9.5	107.5
Eligible Under Revised Plan	95.0	9.5	104.5
Under Construction	6.8	5.5	12.3
Under R.O.W.	8.0	4.0	12.0
Under Design	38.4	---	38.4
Under Location Study	62.3	---	62.3

Note: Mississippi is acquiring R.O.W. on 4.0 miles of this corridor and has scheduled staged construction on this section in 1986.

Alabama expects to proceed to construction in 1986 on a 8.0-mile section from Chestnut Grove Church to SR-43. Design was started in 1984 on the 38.4 mile section from U.S. 43 south of Hamilton to US 78 west of Jasper and right-of-way acquisition is scheduled to start on the westerly 14.1 miles of this section in 1986.

2. Capabilities (As estimated by State Highway Departments):

(Dollar amounts in millions)

		1986	1987
ALABAMA			
Corridor "V"	Design	$0.0	$ 0.1
	Right-of-way	0.0	2.5
	Construction	6.3	2.5
	Subtotal	6.3	5.1
Corridor "X"	Design	0.0	0.0
	Right-of-way	1.0	1.0
	Construction	17.8	18.8
	Subtotal	18.8	19.8
TOTAL		21.1	24.9
MISSISSIPPI			
Corridor "V"	Design	1.4	0.0
	Right-of-way	3.1	1.5
	Construction	11.1	9.0
	Subtotal	15.6	10.5
Corridor "X"	Construction	7.5	15.3
	Subtotal	7.5	20.0
TOTAL		23.1	25.8

HEALTH PROGRAM

Mr. **Bevill**. Would you review your accomplishments in the health-care finish-up program.

Ms. **Pizzano**. The Commission proposed a three-year health-care finish-up program to complete its mandate to assist the development of needed health care facilities and services in Appalachia. The program was completed in fiscal year 1985. In the three years 1983, 1984 and 1985, the Commission approved 123 health grants in eleven states, totaling $11.7 million in ARC assistance. Through this period of time, these projects provided: First, primary care for 53 counties, including primary care for an estimated 195,000 people in 41 countries, plus 370 physician placements in 12 others. It also includes the construction of 13 primary care centers and major renovation of nine others; and secondly, prenatal or related care in 24 eligible designated counties (27,000 maternity cases). By the end of last year, 77 of the 89 counties eligible for health care projects had been reached. The remaining 12 counties all had the opportunity to participate in these programs but, for varying reasons, did not do so, either because they resolved their own problems, or conditions changed within the counties.

Mr. **Bevill** What would be the impact of the rescission on the 1986 health program?

Ms. **Pizzano**. Since there is no FY 1986 ARC health program, that is, it was completed as planned by the end of FY 1985, no impact upon this program would be felt by the rescission.

Mr. **Bevill**. What would you say were the major accomplishments in the past several years in health care?

Ms. **Pizzano**. At the close of FY 1985, we had accomplished our three major goals, namely, providing basic health care within 30 minutes of all people in the region, with the possible exception of those living within 12 of the region's 397 counties; reducing the infant mortality rate so that in 1981 it was 11.95 (deaths per 1,000 births) compared to 11.9 of the U.S. rate, and assisting the communities of our region in physician recruitment and placement in underserved towns and hamlets.

ARC STAFF

Mr. **Bevill**. What are your requirements for the Federal Co-Chairman's staff in FY 1987 if the Commission is continued? How much funding is required?

Ms. **Pizzano**. The same amount as appropriated in 1986, $450,000, would cover the current staff and would be sufficient.

Mr. **Bevill**. What are the Commission's total staff requirements in FY 1987? How much funding is required?

Ms. **Pizzano**. The Governors Budget calls for Federal contribution of $1,750,000. This would be matched by the States and would finance 58 full-time non-Federal positions.

Mr. **Bevill**. Do you believe that the Appalachian Regional Commission should continue to exist and be funded in FY 1987? Why?

Governor **Collins**. I believe that the Commission's presence is crucial until these events occur: First, we have to secure long range financing for completion of the Appalachian Development Highway

System; and second, there is help available to address the basic needs of our most needy counties.

Of course, the Commission has been a great help to the Region over the years in focusing attention and developing alternatives for many common problems, ranging from school dropout prevention or responsible opportunities or flood mitigation strategies. I am hopeful that some of these initiatives can be continued too, but completion of the highway system and help for the distressed counties is essential.

Mr. **Bevill**. In your view, how do the other 12 Appalachian Governors feel about continuation of the ARC?

Governor **Collins**. The Governors clearly support the goals of the "finish-up" program submitted to Congress in 1981, and the 1987 request to carry forth that program, and unanimously passed a resolution at our meeting this past Tuesday, reaffirming support for completion of the Appalachian Highway System.

Mr. **Bevill**. How many of the 13 Appalachian States would be able to assume the activities now funded by the ARC?

Governor **Collins**. I think that most of the states will cetainly try, but they will have difficulty, for example: Few states, if any, can make up out of state funds the 80 percent ARC contribution to highway projects. States currently contribute at least 20 percent of project costs and this would mean a fourfold increase. If states could use only federal-aid primary assistance, and assuming a proportionate amount of funds devoted to the Appalachian system based on mileage, it would take 47 years to complete the "finish-up" system at present day costs and appropriation rates.

In the non-highway program much of Appalachia is still playing "catch-up" with the rest of the country, so cuts in other Federal grant programs, Farmers Home, HUD, Small Cities, etc., have an even greater impact. Few states have the taxing ability to provide the critical human resource and infrastructure improvements to distressed communities which the ARC has been able to provide. Similary, the focus on multi-state development problems—such as health care or vocational education—is likely to get short shrift. Finally, we're likely to lose ground in another key institutional area, that is the local development districts. The poorest, most rural counties—those most in need of the professional services a district can offer—are likely to be the first to lose them when the ARC assistance is withdrawn.

Mr. **Bevill**. What are your personal priorities for the ARC? What would you personally like to achieve during your tenure as States' Co-Chairman?

Governor **Collins**. My specific goals are: First, to achieve an appropriation for FY 1987. Second, to find a basis for completion of the Appalachian Development Highway System. Third, to assure that there's some follow-through for targeting assistance to our most distressed communities. And, finally, to continue the work we have begun on the dropout initiative.

Mr. **Bevill**. Why, in your view, does the Administration want to eliminate the Appalachian Regional Commission.

Governor **Collins**. That is not a question I am in a particularly good position to answer. Initially, I believe it was seen as in conflict with the development image the Administration wished to pursue—it didn't fit neatly into the free market/enterprise zone approach. Now, I think they are under the mistaken belief that the programs are no longer needed, that we have achieved our goals and the Region no longer should have special help.

Mr. Bevill. Are there any parts of the ARC program that would be compatible with the Administration's policies? If so, what are they?

Governor Collins. The Commission's programs, for example foster a public/private approach to economic development both through the make-up of the local development districts, and in individual projects funded by the Commission. Also, they enable each state to determine the most effective way to address a problem through its shared decision-making process. Further, they have been used to develop small business assistance and entrepreneurial opportunities, high tech and export promotion programs that will strengthen America's competitive position in world markets. Finally, they could be used to target assistance in a broad range of program areas to designated enterprise zones, if that legislation is adopted.

Mr. Bevill. I understand that at your recent Appalachian Governor's Meeting there was considerable discussion about the future of the highway program. Could you bring us up to date on the Governor's position on the Appalachian highway program?

Governor Collins. On Tuesday at our Commission meeting the States unanimously adopted a resolution which reaffirms our support for completion of the Highway System and authorizes me to appoint a committee of Governors to explore options for obtaining adequate financing to complete the system. The Governors believe that completion of the system, particularly the 322 miles remaining on the "finish-up" program, are crucial to future economic development and to traffic safety.

Mr. Bevill. The Governors' budget request cites a study ARC made showing the school dropout rates for central Appalachian Region are 59 percent above the U.S. average. Can you tell us what you have been doing to help overcome this problem?

Governor Collins. As you know, with the leadership of Federal Co-Chairman Pizzano and the strong support of the Governors, the Commission allocated $1 million last year to launch a major initiative on dropout prevention. Some of those funds have already have been granted to local groups, through the Appalachian Foundation, for projects which have shown strong, local, private support. It is our hope to raise significant additional private sector funds to help finance this effort.

Mr. Bevill. What effect do you think the lowering oil prices will have on Kentucky and the other Appalachian coal states?

Governor Collins. Kentucky, as you know, leads the nation in coal production, and Appalachian States produce almost one-half of the nation's coal. Any reduction in energy costs will have some negative impact, particularly in the area of exports. While overall, coal is a small percentage of total regional employment, in some counties it is the economic mainstay. It is here that the greatest impacts will be felt.

[The following was provided for the record.]

1. Appalachian Regional Commission Action on Grace Commission Recommendations:

The Grace Commission made nearly 2,500 recommendations to improve the operating efficiency of the Federal Government. The Appalachian Regional Commission has worked in several areas noted by the Grace Commission to achieve greater efficiency. These include contracting for certain services which can be more economically performed outside ARC, reducing the Federal share of program costs, accelerating the closing of grants and the recovery of grant balances and a reorganization and consolidation of functions leading to a reduction in staff required to operate the agency.

Rather than duplicate resources elsewhere in government, the Commission, since its inception, has contracted with the Department of Commerce to perform its payroll and accounting services as well as many other Federal agencies for grant management services. For example, our interagency agreement with DOT allows ARC to use the engineering and administrative capabilities already at DOT rather than have a separate duplication staff at ARC.

In recognition of the fact that there are often unexpended balances remaining in grants upon the completion of projects, the Commission has an aggressive effort, working with the basic Federal agencies, states and grantees, following the progress of approved projects. As a result, 79 percent of all projects approved from 1965 to September 1985 have been closed and millions of dollars in unexpended funds have been recycled to further meet the needs of the people of Appalachia.

In an effort to broaden the impact of its resources, the Commission generally limits its participation in its nonhighway grant program to 50 percent of total project cost down from a previous range of 80 percent to 100 percent.

Keeping pace with the narrowing of the scope of its program, the Commission's staff has been reduced also, with the level in FY 1986 being approximately half the level in 1981.

Appalachian Regional Commission

Gramm-Rudman-Hollings Sequestration

The following tables show the sequestration required in the two accounts and in the third table, the sequestrations by program within accounts.

APPALACHIAN HIGHWAY PROGRAMS

Highway mileage for Corridors by state. Comparisons between previously authorized program, and the Governors' Revised Program.

	Previously Authorized		Governors' Finish-Up Program			
State	Total Miles	Auth. for Construction	Total Miles	Auth. for Construction	Federally Financed 1/	Added State Initiative 2/
Alabama	253.5	244.2	214.8	205.5	145.4	60.1
Georgia	137.2	118.0	130.9	111.7	111.7	---
Kentucky	581.6	433.4	545.0	396.8	391.5	5.3
Maryland	85.4	81.4	81.8	77.8	69.8	8.0
Mississippi	119.8	116.8	88.9	85.9	85.9	---
New York	255.3	219.5	239.9	204.1	204.1	---
North Carolina	205.9	203.2	177.8	175.1	175.1	---
Ohio	293.5	201.1	260.8	168.4	168.4	---
Pennsylvania	509.0	453.5	344.2	288.7	243.3	45.4
South Carolina	30.7	22.9	30.7	22.9	22.9	---
Tennessee	342.2	331.8	271.5	261.1	252.8	8.3
Virginia	201.6	190.8	177.2	166.4	166.4	---
West Virginia	423.5	408.4	328.0	312.9	292.2	20.7
TOTALS	3,439.2	3,025.0	2,891.5	2,477.3	2,329.5	147.8

1/ Includes staged prefinanced construction miles requiring additional federal funding. 1,864.3 miles are complete and open to traffic.

2/ A number of states have committed themselves to the construction of portions of the corridor system in their states from other than Appalachian Commission funds. It is expected that additional states will do such work although specific commitments have thus far not been made.

NOTE: In the tallies above the total miles column includes 414.2 miles of the corridor system which was determined to be adequate and which would not be authorized for additional construction.

PROGRAM, PROJECT, ACTIVITY DETAIL
($000)

Agency: Funds Appropriated to the President[1/]

Account Title: Appalachian Regional Development Programs

Account ID code: 04-02-0090-X-1-452-A; 11-0090[1/]

Source: P.L. 99-141, House Report (Conference Report) 99-307, Senate Report 99-110, and House Report 99-195

Program, project, activity	Obligation Limitation Base	 Sequester
1. Appalachian Development Highway System:	85,000	3,655
(a) Corridor X Alabama	(10,000)	(430)
(b) Corridor V Mississippi	(3,000)	(129)
(c) Corridor G West Virginia	(7,000)	(301)
(d) All other ADHS	(65,000)	(2,795)
2. Non-Highway Programs:	35,000	1,505
(a) Special Economic Development and Educational Projects	(6,000)	(258)
(b) Ongoing Port Development Projects	(9,000)	(387)
(c) All Other Non-Highway Programs	(20,000)	(860)
Total	120,000	5,160

[1/] These are the account title and identification code shown in the OMB-CBO report. Under P.L. 99-141 the account title and identification code were changed to "Other Independent Agencies - Appalachian Regional Commission" and 31-09-0200-X-1-452-A.

PROGRAM, PROJECT, ACTIVITY DETAIL
($000)

Agency: Appalachian Regional Commission

Account Title: Salaries and Expenses

Account ID code: 31-09-0200-X-1-452-A

Source: P.L. 99-141, House Report (Conference Report) 99-307, Senate Report 99-110 and House Report 99-193

		Obligation Limitation	
Program, project, activity		Base	Sequester
1.	Salaries and Expenses	2,200	95
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	Total	2,200	95

EFFECT OF GRAMM-RUDMAN-HOLLINGS ON 1986 APPROPRIATIONS

	(Thousands of Dollars)		
Program	1986 Appropriation	Proposed Sequestration	Program After Sequestration
Highways:			
Development Highway	$ 94,457	$ 3,310	$ 91,147
Access Roads	8,161	300	7,861
Administration	1,365	45	1,320
Obligations	103,983	3,655	100,328
From prior year balance	-18,983	---	-18,983
Appropriation	$ 85,000	$ 3,655	$ 81,345
Area Development:			
Jobs and Private Investment	$ 36,700	$ 1,175	$ 35,525
Distressed Counties	11,500	145	11,355
Health Finish-Up	---	---	---
Administration	800	35	765
Subtotal	49,000	1,355	47,645
Less Savings	-7,112	---	-7,112
Projects in transit	+6,639	---	+6,639
Net Obligations	48,527	1,355	47,172
From prior year balance	-17,027	---	-17,027
Appropriation	$ 31,500	$ 1,355	$ 30,145
LDD & Technical Assistance:			
LDD Assistance	$ 3,000	$ ---	$ 3,000
Technical Assistance	1,595	150	1,445
Obligations	4,595	150	4,445
From prior year balance	-1,095	---	-1,095
Appropriation	$ 3,500	$ 150	$ 3,350
Salaries & Expenses:			
Federal Co-Chairman	$ 450	$ ---	$ 450
Commission Administrative Expenses	1,750	95	1,655
Appropriation	$ 2,200	$ 95	$ 2,105
Grant Total:			
Total obligated, net	$ 159,305	$ 5,255	$154,050
From prior year balance	-37,105	---	-37,105
Total Appropriation	$ 122,200	$ 5,255	$116,945

APPALACHIAN REGIONAL COMMISSION

OPERATING AND CAPITAL EXPENDITURES--FISCAL YEAR 1987 ENERGY AND WATER DEVELOPMENT BILL
(Thousands of Dollars)

	Fiscal Year 1985	Fiscal Year 1986	Fiscal Year 1987 recommendation
Operating expenses	$ 29,000	$ 15,545	$ 19,100
Capital and construction	120,000	101,400	292,100
Total	$149,000	$116,945	$311,200

APPALACHIAN REGIONAL COMMISSION

ESTIMATED AND ACTUAL OUTLAYS BY APPROPRIATION ACCOUNT
($000)

	1983		1984		1985	
	Approp	Outlay	Approp	Outlay	Approp	Outlay
1. As initially budgeted (Budget yr column)						
ARDP	80,000*	293,000	80,000*	213,000	80,000*	188,000
S&E	---	39	---	27	---	27
2. As Appropriated (Current yr column)						
ARDP	165,133	253,000	154,400	203,000	149,000	189,000
S&E	2,900	2,900	2,700	2,700	2,300	2,300
3. Actual						
ARDP	165,133	263,451	159,400	212,178	149,000	201,233
S&E	2,900	2,896	2,700	2,689	2,300	2,299

*Request for appropriation to Department of Transportation

Testimony of
Winifred A. Pizzano
Federal Co-Chairman
Before the House Subcommittee on
Energy and Water Development Appropriations
February 27, 1986

Mr. Chairman, Mr. Myers, distinguished Members, thank you for the opportunity to appear before your committee.

My distinguished fellow Co-Chairman, Governor Martha Layne Collins of Kentucky, and I bring you two separate proposals concerning the future of the Appalachian Regional Commission.

The Administration is proposing termination of the Commission—both its highway and nonhighway programs—at the end of Fiscal Year 1986. Accordingly, no funds for Fiscal Year 1987 have been included in the President's budget.

The Administration also proposed to rescind 81 million dollars of the 122.2 million dollar appropriation for Fiscal Year 1986, including 59.4 million dollars from highways, and 21.6 million dollars from area development programs.

In addition to the recission, the Administration budget identifies an additional $5,255,000 that would be sequestered under the provisions of Gramm-Rudman. I have appended a table showing by program the amounts that would remain available given various actions by Congress.

Should the President's recommendation to terminate the Commission this year be accepted, there would be 10 million dollars in deferred funds available over three years to administer the closeout of projects and activities. The Commission would be responsible for initial program closeout actions and for an orderly transition to the Federal Highway Administration and the Department of Commerce through March 31, 1987. Thereafter, Federal Highway Administration and Commerce would become responsible for the closeout of highway and nonhighway activities, respectively.

Mr. Chairman, I continue to support the Administration's proposal to terminate the Appalachian Regional Commission for the following reasons. First, I believe that the ARC has, in large measure, accomplished its original mission. The original goal was to help create in Appalachia a capacity to compete successfully with the rest of the country. In so doing, it was hoped that federal investment in development activities would act to stem the region's drag on the overall American economy and improve the quality of life of the region's inhabitants.

No one in the Administration would suggest that poverty has been completely eliminated in Appalachia; any more than we would suggest it has been completely eliminated anywhere else in the United States. But to remember the Appalachia of 1965 is to appreciate the Appalachia of 1986. Today residents of Appalachia are far healthier, better educated, more highly skilled, and wealthier than they were when the ARC began.

Second, I believe that the most serious economic problems remaining in the region are ones unlikely to be solved by ARC resources and processes — ones designed twenty years ago to deal with different problems in a wholly different economic climate. For example, areas that depend on manufacturing have been deeply shaken by the dwindling role of manufacturing as an employer in the U.S. economy, a fact which ARC can do little to change. Appalachia would be better served by programs that encourage small business development, increase leveraging of investment capital, education initiatives by states and local communities, and the development of exports.

Third, nothing has been - or will continue to be - more beneficial to the Appalachian region than the continued economic recovery that's been occuring over the last few years. Multi-billion dollar deficits threaten economic recovery and its expansion to all of the the Appalachian region. There is a need to cut substantial amounts of federal spending in order to help bring deficits under control - a need which is being addressed through the recission and Gramm-Rudman processes and, in the case of ARC, a recommendation for termination.

Fourth among my reasons for requesting zero funding for ARC is one that every American understands; fundamental fairness. People may disagree about which programs to cut, but they all agree that the necessary "belt-tightening" should be fair, and that any sacrifices should be shared.

If a community falls anywhere within the legislatively defined geographic boundaries of the ARC, no matter how healthy the local economy, it is eligible for ARC grants. No other communities, no matter how distressed are eligible. And these narrowly targeted funds are provided by all taxpayers. Though I accept that 20 years ago some measure of financial sacrifice from all citizens was appropriate to bring Appalachia into parity with the rest of the nation, I do not believe that such a case can now be made in any valid or equitable way without changing eligibility.

I would now like to briefly review the progress made to date regarding the Finish-up program activities.

Distressed Counties

Under the area development program, we have directed a significant share of ARC area development resources to the most severely distressed counties in the region. As you know, Mr. Chairman, these counties qualified for relatively few ARC dollars over the years because those dollars were directed by law to areas with the greatest growth opportunities, and the distressed counties had few such opportunities.

These 76 counties have been targeted under the finish-up program receiving nearly 46 million dollars of ARC assistance in the last 3 years, representing approximately 27% of area development funds available during that period. This amounts to nearly 30 million dollars for 134 projects to improve water, sewer and waste treatment facilities, which has been a basic need in these areas. Other aid included 6.9 million dollars for 43 job-creating type projects and some 9 million dollars for various health, housing and access road projects. We are continuing our special effort on behalf of these neediest counties in Appalachia.

Jobs and Private Investment

I also want to report that the narrow focus of our other area development funds under our Jobs and Private Investment program has resulted in more effective use of ARC dollars. During 1983-1985, the 267 infrastructure projects that ARC funded with a total of about 54.2 million dollars attracted almost 907.6 million dollars in private investments and when completed, will create approximately 26,000 new jobs.

Health

Over the three-year health finish-up program completed in 1985 we funded basic primary care projects which are reaching 195,000 people annually in 41 counties, providing care to some 27,000 maternity cases, construction of 13 primary care sites and major renovation on 9 others and placement of approximately 350 physicians through 6 state recruitment programs. This program has accomplished using almost 11.7 million dollars of ARC funds involving 122 projects. We are proud of the accomplishments of the ARC health program which has been a leader of innovative programs to provide health care in rural areas through primary care clinics, strengthening hospitals and physician recruitment.

Highways

Finally, with regard to our highway program during the years 1983 through 1985, 303.7 million dollars was obligated with 289.8 million dollars on the corridor highways and 13.9 million dollars on access roads. During this period, 201 miles of corridor highways have been completed, and we placed under construction 118 miles, acquired right-of-way for an additional 91 miles and funded engineering design for still another 116 miles, and placed 94 miles of access roads under construction.

Mr. Chairman, I fully support the Administration's position. However, I am well aware that the Congress has not agreed with the President's budget in the past. I wish to assure the Committee that in the event that Congress again appropriates funds for the Commission, I will continue to assure that those funds are expended as prudently and effectively as possible.

Mr. Chairman, as you are aware the Commission has focussed on the school drop-out problem. We have a visual report for you at this time.

Mr. Chairman, this concludes my prepared statement. Once again I thank you for the opportunity to appear before you and other members of the subcommitee. I will be pleased to respond to any questions you may have.

APPALACHIAN REGIONAL COMMISSION

EMPLOYEES FUNDED BY ENERGY AND WATER DEVELOPMENT APPROPRIATIONS

PRESIDENT'S BUDGET

Agency	FISCAL YEAR 1985-			FISCAL YEAR 1986-			FISCAL YEAR 1987; proposed		
	Federal	Non-Federal	Total	Federal	Non-Federal	Total	Federal	Non-Federal	Total
ARC	7	67[1]	74	7	62[1]	69	4	17	21[2]
ALLOCATION ACCOUNTS	32	--	32	34	--	34	18	--	18
TOTALS	39	67	106	41	62	103	22	17	39

[1] Federal payment equals 50 percent of total compensation costs.

[2] Per President's budget, ARC proposed for termination on September 30, 1986 with an approximate 6 month initial close out activity.

GOVERNOR'S BUDGET

Agency	FISCAL YEAR 1985-			FISCAL YEAR 1986-			FISCAL YEAR 1987; proposed		
	Federal	Non-Federal	Total	Federal	Non-Federal	Total	Federal	Non-Federal	Total
ARC	7	67[1]	74	7	62[1]	69	7	58[1]	65
ALLOCATION ACCOUNTS	32	--	32	34	--	34	31	--	31
TOTALS	39	67	106	41	62	103	38	58	96

[1] Federal payment equals 50 percent of total compensation costs.

APPALACHIAN REGIONAL COMMISSION

SUMMARY OF BUDGET AUTHORITY AND OUTLAYS
(MILLIONS OF $S)

FISCAL YEAR		1987 PRESIDENT'S BUDGET			1986 SEQUESTRATION			WITH SEQUESTRATION			1986 PROPOSED RESCISSION			WITH RESCISSION			1987 GOVERNORS REQUEST			WITH GOVERNORS CHANGES		
		ARDP	S&E	TOTAL	ARDP	S&E	TOTAL	ARDP	S&E	TOTAL	ARDP	S&E	TOTAL	ARDP	S&E	TOTAL	ARDP	S&E	TOTAL	ARDP	S&E	TOTAL
1987	B.A.	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	+309.0	+2.2	+311.2	309.0	2.2	311.2
1987	0	147.0	0	147.0	-1.4	0	-1.4	145.6	0	145.6	-21.3	0	-21.3	124.3	0	124.3	+23.0	+2.2	+25.2	147.3	2.2	149.5
1988	0	112.0	0	112.0	-1.5	0	-1.5	110.5	0	110.5	-24.3	0	-24.3	86.2	0	86.2	+82.3	0	+82.3	168.5	0	168.5
1989	0	65.0	0	65.0	-0.9	0	-0.9	64.1	0	64.1	-13.8	0	13.8	50.3	0	50.3	+94.0	0	+94.0	144.3	0	144.3
1990	0	30.0	0	30.0	-0.7	0	-0.7	29.3	0	29.3	-10.5	0	10.5	18.8	0	18.8	+53.3	0	+53.3	72.1	0	72.1
1991	0	11.3	0	11.3	-0.4	0	-0.4	10.9	0	10.9	-6.6	0	-6.6	4.3	0	4.3	+40.7	0	+40.7	45.0	0	45.0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+15.7	0	+15.7	15.7	0	15.7

Prepared Statement of
Governor Martha Layne Collins of Kentucky
States' Co-Chairman
Appalachian Regional Commission
To
House Appropriations Subcommittee on
Energy and Water Development
February 27, 1986

Mr. Chairman and Committee Members, I am honored by the opportunity to bring you personally the profound appreciation for your support of ARC that I share with all the Appalachian Governors, local officials and the people of the Region.

We are well aware that without your unyielding support in recent years, there would no longer be an Appalachian Regional Commission. And without ARC, much that is being achieved in Appalachia would be going undone.

As we so proudly recognized at our 20th anniversary banquet just one year ago, you and Chairman Whitten are truly ARC prioneers, and the people of the Region are ever in your debt.

I shall make a general report on ARC and Appalachia, then highlight a fiscal 1987 budget request I have submitted in behalf of all the Appalachian Governors, Democrats and Republicans alike.

In recent years other Governors who preceded me as ARC States' Co-Chairman have reported to you on the progress we have made in Appalachia, as well as describing some of our more persistent problems.

While somewhat uneven in different parts of the Region, progress from the beginning of ARC in 1965 through 1980 was dramatic and heartening to those of us concerned about Appalachia.

Poverty rates in Appalachia were down by more than 50 percent. Income was rising toward the national average. Outmigration was reversed in the 1970s. All the measures of health care, educational attainment, housing and employment were dramatically documenting the closure of the gaps between Appalachia and the rest of the nation.

But perhaps the most important change of all was the rebirth of hope in Appalachia, hope for the future, hope for the children of Appalachia.

Back in 1964, the Appalachian Commission that had been appointed by President Kennedy wrote of:

> ". . .a child in a remote valley, his horizon of opportunity limited to the enclosing hills. . ." and
>
> ". . .the despair of his father, who, idled by forces beyond his control and seeing no prospects of future employment, must live month in and month out with the vision of that child repeating his own history."

That had changed considerably by 1980. Though Appalachia still lagged behind the nation, young people were finding more opportunities in the Region and better preparation for the world beyond the mountains if they chose to leave Appalachia.

Since 1980, however, Appalachian progress has been interrupted by several factors beyond our control.

The first of these factors was the recession of the early 1980s. That recession had particularly devastating effects on coal employment and the kinds of manufacturing on which Appalachia is especially dependent.

A second factor still slowing economic progress in Appalachia is the worldwide shift in trade patterns, caused at least in part by high interest rates in the United States. Once again Appalachia has been more adversely affected than the rest of the country because of its dependence on coal and the kinds of manufactured goods facing intensified competition at home and abroad, especially apparel, textiles, steel and wood products.

The changed structure of the Federal budget also has affected Appalachia adversely. Economic development programs like ARC, especially those benefitting small towns and rural areas, have been cut sharply or eliminated. On the other hand, Appalachia gets only one-third of its per capita share of the growing defense budget.

A fourth factor hurting the economy of many parts of Appalachia has been deregulation of air, rail and truck transportation, which has reduced or eliminated service to small cities and towns.

And finally, the kinds of new jobs being created now are not in Appalachia's strong suit of the past--mining and manufacturing--but in the service industries.

The combined impact on the Appalachian economy of these factors beyond our control was devastating. Appalachian unemployment rates soared more than one-third above the near record national figures. In some Appalachian counties, unemployment rose to two or three times the national level. State and local tax revenues were decimated.

For a time earlier in this decade, there was concern that this downward economic spiral in Appalachia might wipe out our gains and repeat the regional depressions that had impoverished Appalachia in the past.

Fortunately, however, the economic base that had been built since 1965—the highways, the community facilities, the housing, the healthier, better educated people--were there as a development base to prevent an economic free fall.

In addition, with considerable ARC help, we had built in the Region a development structure and approach that has served us well in adapting to the new economic realities. Nothing demonstrates this better than the manner in which some of our states and development districts have taken the lead in making effective use of the Job Training Partnership Act.

Among the most pervasive changes in economic development we have made in Appalachia--and especially in Kentucky--is the intensified emphasis on education as the cornerstone of job creation. We are doing all we can to regain job losses in our traditional mining and manufacturing industries; but we are also doing more to prepare the people of Appalachia for the more technical new kinds of jobs. . .jobs in medium and high tech industries, jobs in service industries, careers in small businesses.

We have used much of our reduced ARC allocations to adapt to these changing economic and employment circumstances.

During 1983 and 1984, under the leadership of our Federal Co-Chairman, Winnie Pizzano, and Governors Bill Winter of Mississippi and Dick Thornburgh of Pennsylvania, ARC launched a regionwide program to identify the jobs of the future and ways to better equip the Appalachian people to fill these jobs.

During 1985, acting on the initiative of Ms. Pizzano and with then States' Co-Chairman Governor Joe Frank Harris taking the lead, ARC and the Appalachian States launched a special effort to reduce school dropouts as a way to better prepare Appalachians for the new kinds of jobs. The centerpiece of that effort was the award of $1 million, announced by my Federal counterpart at our 20th anniversary banquet, to the Appalachian Foundation for local dropout prevention programs.

Appalachia has long had a dropout problem even more severe than that of the nation. In the past, many of the jobs in Appalachian mining and manufacturing industries could be handled well by hardworking mountain people with little education. Many of them did not see the need for their children to be any better educated. But times have changed. Many of the old traditional jobs are no longer there, and their children will need a high school diploma or more for the new jobs.

So in Kentucky we are using much of our ARC help to prevent dropouts and improve literacy. This is money we still need desperately for public facilities and other development hardware; but--in my opinion--we often need it even more for education.

Last fall in Appalachian Kentucky, I launched a comprehensive dropout reduction program. I was able to use a major part of our ARC area development allocation for the year along with matching state and local funds. The program includes:

- Demonstration dropout reduction projects in the poorest Appalachian counties;
- At the State level, technical assistance on dropout problems in all Appalachian school districts and a special documentary film on dropouts through Kentucky's popular educational television system;
- On the Regional level, we in ARC have set a three-year goal: reduction of the Appalachian dropout rates to the national level. As one action toward that end, the first of 500 Appalachian teachers are each now getting 30 hours of instruction on dropout prevention in an ARC funded program at Appalachian State University.

These activities are integrated well with the record breaking new levels of commitment to education we have recently made in Kentucky and similar commitments made by other Appalachian Governors.

We have learned the importance of a child's early years. We know if we detect problems in the early years, they can often be corrected, thus saving dollars that are spent for handicapped and special education programs. As a former teacher, I feel qualified to talk about the need for education, and it is no secret that during my administration as Governor of Kentucky, I have put a high priority on education. I am organizing an Office of Child Development that will be administrated directly from my office. The mission of this office will be to address the needs of young children.

We simply must make these extraordinary investments in education to support economic development in the world of today and tomorrow. A decent education is essential to help the individual get a job. A good education level is equally essential to the community, area or state trying to create and retain jobs, as important as good highways and community facilities. Our considerable new Kentucky commitment to education was important, I am sure, to our success in getting the new Toyota plant for Kentucky.

(Incidentally, while the Toyota plant near Georgetown will be about 30 miles outside of Appalachia, many people will commute to jobs there from Appalachia along the highway system you helped us build in Kentucky.)

Last month in my budget address to the Kentucky legislature, I said of our commitment to education in Kentucky, "We signaled to the world that Kentucky was prepared to invest in the future of its people and that we were moving into a new age." We are stretching our resources to the utmost to move into this new age when Kentucky and all of Appalachia will be on economic parity with the nation. We think we have earned your help a bit longer.

You have before you a copy of a bipartisan 1987 ARC budget calling for the minimum help we 13 Appalachian Governors think we need to move on toward the dawn of that new age for Appalachia. It details both our progress and our needs.

Back in 1981 the Appalachian Governors, in answer to a Congressional request initiated by this Committee, submitted an ARC finish-up program. As you know, it was prepared in a spirit of sacrifice to make our share of contributions in a time of deep cuts in taxes and government programs. It was designed to fund a limited program needed to finish up the work of ARC in an orderly manner.

Both the highway and area development programs of ARC were cut back sharply below previous levels, with the scope of the programs narrowed to meet only the most critical needs.

Our finish-up program included specific commitment to completion dates and specific limits on Federal funding. It included firm commitments by the Appalachian States. Unfortunately, however, Federal dollars appropriated have been less than half those needed to keep the finish-up program on schedule.

Despite the limited funding of the ARC finish-up program, we were able to complete the health component on schedule, in part due to a rising number of doctors graduating in recent years. We completed the health program last year and hope you share our pride in finally extending basic health care throughout Appalachia.

Beyond the health program, however, we have much more to do in Appalachia.

The budget I have submitted for the Appalachian Governors will enable us to continue on with the rest of the ARC finish-up program at the levels we recommended in 1981. We are requesting nearly the same amounts as in the 1986 ARC budget request:

> $234,000,000 for the ARC highway program and access roads;
>
> $70,000,000 for area development;

$5,000,000 for local development districts and technical assistance;

$1,750,000 as the Federal share of Commission expenses; and

$450,000 for expenses of the Office of the Federal Co-Chairman.

So, the total of $311,200,000 is the same amount requested last year.

To put the request for highway and access road funding into perspective, I want to highlight several facts.

- Our budget request is a relatively modest one. Back in 1981, when 1,300 miles of the Appalachian Development Highway System was still unimproved, the Governors cut the miles in the finish-up program to 550; they asked in their finish-up program less than one-third the Federal dollars needed to complete the entire system, and they committed to completing an additional 181 miles on the system without ARC funds.
- Despite this pared down program, actual appropriations during the four years through 1986 added up to only enough Federal dollars to enable us to fund two years of the highway finish-up program.
- We have documented for this Committee and others the excellent development returns from the ARC investment in highways, both in terms of new jobs and lower costs for delivery of health and other services. Further documentation is included in the budget request materials I have submitted.
- The budget we are requesting for 1987 will permit us to continue construction of only those miles most critically needed, especially the miles needed to close gaps limiting the use of many miles of highway on either side of the uncompleted portion.

At our ARC meeting two days ago, we Appalachian Governors unanimously passed a resolution reaffirming our support of the Appalachian Development Highway and our determination to complete the scaled-back system. Rather than read it here, with your permission, I'd like to insert that resolution for the record at this point.

It does not make sense to haphazardly abandon now the Appalachian Development Highway System, the backbone of Appalachian economic progress. The members of this Committee have made it clear that you agree. Together we must convince the entire Congress and the Administration.

The $70,000,000 request for the ARC area development program is also relatively modest. Of the $70,000,000:

- $54,000,000 will go to the ARC jobs and private investment program to create or retain jobs and encourage private sector investments.
- $15,400,000 will be used to help the 74 poorest counties in Appalachia meet their most critical needs, especially for safe drinking water and waste disposal.
- $600,000 will be needed to pay Federal agencies for their costs in administration of ARC projects.

Of the $5,000,000 we are requesting for local development districts and technical assistance, $4,000,000 will go to the LDDs.

I know that the LDDs vary somewhat from one to another—and from state to state—in terms of effectiveness. But in Kentucky—where we call them Area Development Districts or ADDs—they are invaluable partners in federal-sate-local economic development. As Federal funds for development have been reduced while state and local responsibilities have been increased, these districts have had to do more with less. They have responded magnificently in Kentucky. Government at all levels and the private sector have a tremendous stake in keeping these districts strong.

Our 1987 ARC budget request includes numerous illustrations of the kinds of ARC projects to be funded. It also includes a rather detailed progress report and amplification of the needs I have mentioned briefly.

In closing I want to comment briefly on two matters.

First of all, we in Appalachia are now recovering somewhat from the setbacks of the early 1980s. We are again bringing our unemployment rates down toward national levels. We are once again moving toward the overall goal set for ARC more than two decades ago: an Appalachian economy on par with that of the rest of the nation. But as our experience in the early 1980s showed, the Appalachian economy is still fragile and we still have a lot of catching up to do.

We in Kentucky--and I believe in most of Appalachia--are doing more than ever at the state and local levels and stretching our economic development resources more effectively than ever before. We are going well beyond meeting our commitment to the ARC finish-up program.

We urge the Congress and the Administration not to abandon this successful effort at this auspicious juncture. Help us get on with the finish-up program so that we can one day share pride in the completion of all ARC programs as we now share satisfaction in the completion of the ARC health program.

Finally, I want to again express for Appalachia our appreciation to you, Mr. Chairman (Bevill), for your understanding and support of our ARC work over the years. I want to thank you specifically for your thoughtful letter of December 19, extending your support of flexibility for ARC Governors in the traditional cooperative ARC process.

Appropriations Committee Chairman Jamie Whitten in his eloquent support of ARC has often cited examples of national investments in one part of the nation paying off in benefits to the entire nation. We are demonstrating to the fullest measure that ARC is such an investment.

I have said of Kentucky that we are poised for progress. With your help, we can make that true of all Appalachia.

I welcome your questions on the budget request I have submitted to you. As Governors who live with budget problems, we know full well that the overriding need to whittle down the historic Federal deficit may make it impossible for you to give ARC all the help it badly needs. But each cut in the budget we are submitting will result in critical finish-up programs being slowed or eliminated.

Thank you for this opportunity to meet with you.

APPALACHIAN REGIONAL COMMISSION

STATES' RESOLUTION NUMBER 580S

A RESOLUTION in Support of the Appalachian Development Highway System

Whereas, the Appalachian Development Highway System was designed by the Appalachian States using the unique shared decision-making process pioneered through the Appalachian Regional Commission with the clear recognition that overcoming Appalachia's isolation was a prerequisite to effective development in the Region; and

Whereas, the Congress authorized the Appalachian Development Highway System, in concert with the Commission's Area Development Programs, to overcome that isolation and bring economic opportunities to the Region; and

Whereas, only 2,000 miles of the planned 3,041-mile System is now complete or under construction, with vital gaps and linkages remaining; and

Whereas, the high cost of construction in the mountainous terrain combined with the low level of annual Federal appropriations have seriously slowed progress in the Region; and

Whereas, failure to complete in a more timely fashion will severely limit the impact of the substantial investment already made, will be a significant blow to economic development efforts in the Region, and will create potentially hazardous traffic and safety problems in many parts of the Region.

Therefore, be it resolved by the Governors of the thirteen Appalachian States:

1. We reaffirm our belief in the critical importance of the Appalachian Development Highway System to the economic growth and quality of life of the Region.
2. We reaffirm our unswerving support for timely completion of the Appalachian Development Highway System and our commitment to use whatever resources are available to us to complete the System.

COMBINED EFFECT OF GRAMM-RUDMAN-HOLLINGS AND RESCISSION PROPOSAL ON 1986 APPROPRIATIONS

Program	(Thousands of Dollars) 1986 Appropriation	Proposed Sequestration	Program After Sequestration	Proposed Rescission	Program After Rescission
Highways:					
Development Highway	$ 94,457	$ 3,310	$ 91,147	$ -59,400	$ 31,747
Access Roads	8,161	300	7,861	---	7,861
Administration	1,365	45	1,320	---	1,320
Obligations	103,983	3,655	100,328	-59,400	40,928
From prior year balance	-18,983	---	-18,983	---	-18,983
Appropriation	$ 85,000	$ 3,655	$ 81,345	$ 59,400	$ 21,945
Area Development:					
Jobs and Private Investment	$ 36,700	$ 1,175	$ 35,525	$ -19,200	$ 16,325
Distressed Counties	11,500	145	11,355	-2,400	8,955
Health Finish-Up	---	---	---	---	---
Administration	800	35	765	---	765
Subtotal	49,000	1,355	47,645	-21,600	26,045
Less Savings	-7,112	---	-7,112	---	-7,112
Projects in transit	+6,639	---	+6,639	---	+6,639
Net Obligations	48,527	1,355	47,172	-21,600	25,572
From prior year balance	-17,027	---	-17,027	---	-17,027
Appropriation	$ 31,500	$ 1,355	$ 30,145	$ -21,600	$ 8,545
LDD & Technical Assistance:					
LDD Assistance	$ 3,000	$ ---	$ 3,000	$ ---	$ 3,000
Technical Assistance	1,595	150	1,445	---	1,445
Obligations	4,595	150	4,445	---	4,445
From prior year balance	-1,095	---	-1,095	---	-1,095
Appropriation	$ 3,500	$ 150	$ 3,350	$ ---	$ 3,350
Salaries & Expenses:					
Federal Co-Chairman	$ 450	$ ---	$ 450	$ ---	$ 450
Commission Administrative Expenses	1,750	95	1,655	---	1,655
Appropriation	$ 2,200	$ 95	$ 2,105	$ ---	$ 2,105
Grant Total:					
Total obligated, net	$ 159,305	$ 5,255	$154,050	$ -81,000	$ 73,050
From prior year balance	-37,105	---	-37,105	---	-37,105
Total Appropriation	$ 122,200	$ 5,255	$116,945	$ -81,000	$ 35,945

3. We recognize the need to seek options for long-term financing of the System to insure its timely completion.

4. We authorize the Appalachian Regional Commission States' Co-Chairman to appoint a committee of Governors to identify options and the necessary steps to obtain long-term financing of the System. The committee will consult with the other Appalachian Governors before pursuing any course of action, and in any event to report back to the Governors no later than June 1, 1986, on their progress.

ADOPTED BY THE APPALACHIAN STATES, WASHINGTON, DC, FEBRUARY 25, 1986.

STATEMENT OF

GOVERNOR GEORGE C. WALLACE OF ALABAMA

BEFORE THE

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

HOUSE COMMITTEE ON APPROPRIATIONS

February 27, 1986

Mr. Chairman and members of the committee, I am pleased to submit testimony to you today in behalf of the Appalachian Regional Commission.

The Appalachian Regional Commission and I go back a long way together. I began my first term as Governor of Alabama in 1963, and later that year was asked to join the President's Appalachian Regional Commission formed by President Kennedy.

As a member of that commission, I helped to design the Appalachian Regional Commission and worked hard to help pass the legislation that brought it to life. I attended the very first meeting of The Appalachian Regional Commission and many of its meetings since then.

Ever since, either as Governor or as a private citizen actively involved in politics, I have taken a keen interest in making the ARC program work.

Twenty years is a long time to be involved with one program, and that span of time has given me a good perspective on ARC's accomplishments.

I know that you are aware of many of the details of those accomplishments, so I will simply say this: ARC programs have brought immeasurable progress to the northern part of my state. These programs, by laying a solid groundwork for economic development, have helped many of our counties grow prosperous beyond anything we could ever have imagined back twenty years ago, when ARC was just starting out.

There are other counties in the northern part of my state that are not as well-developed--they are mostly rural and sparsely populated--but ARC has been of significant help to those counties as well, by providing badly-needed health care facilities, and vocational schools to train our young people so they could compete for jobs anywhere and water and sewer systems so people could have modern facilities to enable them to live decent lives.

One of the most important features of the ARC program is the partnership it has created between federal and state governments. The decisions on what each community needs move from the local level up through the States. That is why ARC dollars --a very small amount by federal budget standards-- accomplish so much.

There is one more aspect of the ARC program I want to stress, and that is the highway program. Nothing is more important to continued economic progress in the Region than the completion of the system that was first mapped out in 1965.

Five years ago, the Appalachian governors looked at the political and fiscal facts and agreed that the projected federal share of $7 billion was unrealistic in light of growing budget restraints. We agreed to cut the system back, to build those segments deemed most critical to the entire system.

But we are still a long way from achieving even this limited goal. Of the 550 miles designated in 1982 for federal funding, only 165--or 41 miles per year--have actually been placed under construction so far because of limited funds available.

ARC has done a good job of establishing its health care and education networks and supporting industrial and residential needs for basic facilities; but the highway system cannot really do its job if it remains so far from completion.

As I look at the counties of northern Alabama, I can see that there is more that ARC could do in each one of them, but nothing will impact on the economic well-being of all those counties as much as completion, or failure to complete, the highway system.

Mr. Chairman, I share with my fellow governors the conviction that the Appalachian program --and most especially its highway program--remains critical to the development of Appalachia.

This committee has been generous and farsighted in its support of ARC. I urge you to continue that support, so that we may move forward together toward real economic parity for this Region.

Thank you.

Program for The Appalachian Regional Commission Fiscal Year 1987

NEW YORK
PENNSYLVANIA
OHIO
MARYLAND
WEST VIRGINIA
KENTUCKY
VIRGINIA
N. C.
TENN.
S.C.
MISS.
GEORGIA
ALABAMA

By the
Appalachian
Governors

As submitted to the Appropriation Committees of the
U.S. House of Representatives and the U.S. Senate, February 1986.

APPALACHIAN REGIONAL COMMISSION
1666 Connecticut Avenue, N.W
Washington, D.C. 20235

January 31, 1986

Honorable Tom Bevill, Chairman
Subcommittee on Energy and
Water Development
Committee on Appropriations
United States House of Representatives
Washington, DC 20515

Dear Chairman Bevill:

As the States' Co-Chairman of the Appalachian Regional Commission for 1986, I am pleased to transmit to you on behalf of my fellow Appalachian Governors a request for appropriations for the 1987 fiscal year to continue the programs of the Appalachian Regional Commission.

The budget request is in accord with the Appalachian Governors' Report of 1981 providing for an orderly completion of the Appalachian Regional Development Program.

I look forward to appearing before the Subcommittee on February 27, 1986, in support of the Governors' budget request.

Sincerely,

Martha Layne Collins

MARTHA LAYNE COLLINS
Governor of Kentucky and
States' Co-Chairman

APPALACHIAN REGIONAL COMMISSION

Budget Estimates, Fiscal Year 1987

As Submitted by
the
APPALACHIAN GOVERNORS

TABLE OF CONTENTS

Page No.

Summary of Budget Requests and Appropriations by activity 1

General Statement and Summary 2

Table - Total Operating Budget 11

Appropriation: Appalachian Regional Development Program:

- Appropriation Language 12
- Development Highways Program 13
  Map following page 20
- Area Development Program 24
  - Jobs and Private Investment Program 26
  - Distressed Counties Program 30
  - Health Finish-Up Program 33
  - Administration 36
- Local Development Districts and Technical Assistance 40

Appropriation: Salaries and Expenses 45

January 31, 1986

APPALACHIAN REGIONAL COMMISSION

BUDGET REQUESTS AND APPROPRIATIONS

		(thousands of dollars)			
Appropriation by Activity		1986 Governors Request	1986 Enacted	1987 Governors Request	Change From 1986 Request
I. Appalachian Regional Development Program:					
A.	Area Development	$ 70,000	$ 31,500	$ 70,000	$ ---
B.	LDD Support & Technical Assistance	5,000	3,500	5,000	---
	Subtotal, Non-highway	75,000	35,000	75,000	---
C.	Highways	234,000	85,000	234,000	---
	Total Appropriation	309,000	120,000	309,000	---
II. Salaries and Expenses:					
A.	Federal Co-Chairman	450	450	450	---
B.	Federal Share of Commission Expense	1,850	1,750	1,750	-100
	Total Appropriation	2,300	2,200	2,200	-100
GRAND TOTAL		$311,300	$122,200	$311,200	$ -100

NOTE: As this budget request by the Governors was in preparation the administration was preparing to request rescission of $81 million of the $122.2 million appropriated to the Appalachian Regional Development Program in 1986. The effect of the Administration's proposal on 1986 is not included in this Governors' budget submission. A table comparing the 1986 program as appropriated with the administration's proposed rescission can be found on page 9. A similar table reflecting sequestration that would be required by the Gramm-Rudman-Hollings Act can be found on page 10.

1987 BUDGET ESTIMATES - APPALACHIAN GOVERNORS

GENERAL STATEMENT AND SUMMARY

Background for Budget Request

The Appalachian Governors are requesting consideration by the Congress of a request, approved by the Appalachian Governors, which would provide appropriations in FY 1987 to carry-out operations under the Appalachian Governors' Finish-Up Program. This request is the logical follow-up of events largely initiated in 1981 by the House Appropriations Committee.

In reviewing the revised 1982 budget submitted by the incoming Administration the Congress recommended a continuation of the Appalachian regional development program and the Commission, but at a reduction from the FY 1981 level. The Congress voted for funding the Commission in FY 1982 to provide an opportunity for the Congressional authorizing Committees to assess the future of ARC as part of Congressional assessment of national economic development policies. To facilitate this assessment, the Commission was asked to submit a report to Congress that would include recommendations for a three- to five-year area development finish-up program and for the completion of the Appalachian Development Highway System. That report was approved unanimously by the Appalachian Governors and transmitted to the Congress on December 31, 1981.

The Administration's budget requests for 1983-1985 would have provided no funds for either the Commission's non-highway program or the Commission's administrative expenses. Funds were, however, requested for an annual $80 million Appalachian Development Highway program to be administered by the Federal Highway Administration. In 1987, as in 1986, the Administration has not even requested funds for the highway program. In each of these past years, however, the Congress has provided funds for both the highway and non-highway programs as well as for the administrative expenses of the Commission.

The Appalachian Governors continue to believe that the Congress should have available for its consideration a budget request that would continue in FY 1987 the orderly finish-up program requested by and transmitted to the Congress and which was initiated in 1983 by the Commission at a reduced appropriation level. This document presents the budget for the 1987, or fifth year, portion of the finish-up program for the consideration of the House and Senate Committees on Appropriations. It is consistent with both the Appalachian Governors' finish-up program, the authorizing legislation that passed the House (H.R. 10) in the first session of the present Congress and the 1987 budget letter submitted to OMB by the Appalachian Governors in November, 1985. The 1987 request would complete the fifth year of the finish-up program, albeit at funding levels significantly lower than those recommended by the Governors.

In its 1985 report recommending authorization to continue the program, the House Committee on Public Works and Transportation (House Report 99-115, part 1) noted that the programs of the Commission have significantly contributed to the development of the Region by improving basic facilities and providing the necessary infrastructure for the Region to move toward self-sufficiency, and also described the "Appalachian partnership" as a model of the sharing of responsibility between all levels of government that has worked to the satisfaction of all parties and noted that the Appalachian program delivery system could be applied to other forms of Federal assistance.

In recommending authorizations for the highway program through 1992 and the non-highway program through 1990, the House Committee stated its belief that the "finish-up" program is responsive to the needs of the area and is reasonable in view of the reduced Federal funds. The finish-up program should stress an increased role for private investment and retain the Federal government commitment to this Region. The area development program should emphasize stimulating regional private investment and job creation, so critical for economic stability. The Committee proposed and the House enacted a new section specifically authorizing the making of grants which would carry out the area development program, namely:

(1) assist in the creation or retention of permanent private sector jobs, the upgrading of the Region's manpower, or the attraction of private investment;

(2) provide special assistance to severely distressed and underdeveloped counties which lack financial resources for improving basic services;

(3) assist in achieving the goal of making primary health care accessible in the Region; or

(4) otherwise serve the purposes of this Act.

The Committee report also noted that there had been no greater catalyst for development throughout the Region than the Appalachian Highway System and provided authorization sufficient to permit concentration on completing priority sections and completion of critical segments where construction has already begun. The National Development Investment Act, Title II, of which included the ARC finish-up program, passed the House on September 4, 1985 by a vote of 260 to 96.

Summary of Budget Request

The budget request for 1987 totals $311,200,000 for the two appropriations which fund all programs of the Appalachian Regional Commission. Of this amount $309,000,000 is requested for the Appalachian Regional Development Programs and $2,200,000 for the Salaries and Expenses appropriation. The following table summarizes the amounts requested for each of the major programs.

GOVERNORS' 1987 BUDGET REQUEST

	1987 Request (000)
I. Appalachian Regional Development Programs:	
A. Highways	
1. Development Highways	$220,700
2. Access Roads	12,000
3. Administration and Planning	1,300
Subtotal, Highways	234,000
B. Area Development	
1. Jobs and Private Investment	54,000
2. Distressed Counties	15,400
3. Health finish-up	---
4. Federal agency administration	600
Subtotal, Area Development	70,000
C. LDD Support & Technical Assistance	
1. LDD support	4,000
2. Technical Assistance	1,000
Subtotal, LDD Support & Technical Assistance	5,000
Total Appropriation	309,000
II. Salaries & Expenses	
A. Federal share of Administrative Expenses	1,750
B. Federal Cochairman's Office	450
Total Appropriation	2,200
Grand Total	$311,200

I. Summary by Program

A. Highway Program (page 13)

The budget request is for $234 million as compared with $234 million requested and $85 million appropriated in 1986. The request includes $220.7 million for development highways, $12 million for access roads and $1.3 million for administrative costs. With these funds it is expected that by the close of FY 1987 a total of 2,060 miles of the 2,477 miles included in the revised and scaled back highway plan will have been placed under construction of which 1,950 miles will be completed.

B. Area Development (page 24)

The budget request is for $70 million, the same requested in 1986, and reflecting termination of the health finish-up program in 1985. It compares with appropriations of $31.5 million in 1985. The largest share, $54 million, will be for those projects selected by the States as best able to provide for the private creation of jobs and the stimulation of private investment in the Region. $15.4 million will be utilized to help the 74 most distressed and underdeveloped counties meet their most critical needs, especially for safe drinking water and waste disposal. Federal agencies who assist in administering the project grants approved under these programs will require $600 thousand.

C. LDD and Technical Assistance (page 40)

This request is for $5 million of which $4 million is to fund ARC contributions toward the administrative expenses of the multi-county local development districts. The remaining $1 million will fund the region-wide Commission program of technical assistance and evaluation associated with the finish-up program. The request is for the same amount requested in 1986, and compares with $3.5 million appropriated.

II. Salaries and Expenses (page 45)

The request for Salaries and Expenses, which provides for the 50 percent Federal contribution for Commission staff and the full cost of the Federal Co-Chairman's staff, is for $2.2 million, the same amount provided for 1986. This includes $450,000 for the Federal Co-Chairman's staff and $1,750 thousand for the Federal contribution to the Commission's administrative expenses in 1986. The Act requires that the member States and the Federal government both contribute 50 percent of the cost. The budget is based upon a reduction in the size of the Commission staff from 62 positions in 1986 to 58 in 1987. The Federal contribution will be matched by an equal amount from the 13 member States, and with the use of prior year balances, will provide a Commission administrative budget in 1987 of $4,380 thousand.

Area Development Finish-Up--Program Operation

The Appalachian finish-up program represents a departure from some aspects of the allocation system initiated with the Area Development program in 1975. Instead of a single allocation for the non-highway programs, each state is provided with separate allocations for the jobs and private investment programs, and the distressed counties program. Within these allocations each Governor is asked to submit specific local and State sponsored projects--generally developed in cooperation with the multi-county development districts--to the Commission for approval.

In the Commission program, projects may only be initiated at the State and local level and must be included in the state development plans and investment programs. These state plans and investment programs must be approved by the full Commission. The Federal Co-Chairman represents the Administration's interests in the Commission's deliberations and decisions. By blending in this manner the States' concerns and priorities with national policy, the Commission makes the joint decisions and determinations which constitute the regional development program.

Another group of participants has taken on increasing importance over the Commission's life. During more than a decade of experience, the 69 multi-county local develoment districts (LDDs), which serve all the 397 Appalachian counties, are proving their capacity to help local governments and citizens share in economic development on this areawide basis. The States rely on the LDDs for local government and citizen participation in their activities. Local government completes the Federal-State-local institutional framework of the Commission.

The Changing Region

Five years ago, the Commission reported to Congress that since ARC was established in 1965, Appalachia had made dramatic strides toward the goal of economic parity with the rest of the nation. For example:

- Outmigration from the Region was reversed in the 1970s.
- The percent of Appalachian people living in poverty had been cut in half and was approaching the national average.
- Per capita income had moved up from 78 percent of the national average to 85 percent.

Other major gains are evident in vastly improved roads, health care and education and modernized community facilities, ranging from water and sewer systems to libraries.

Since 1980, national and international events have interrupted the Region's decade and a half of progress leaving the economy in Appalachia fragmented. Some areas continue to make economic gains while other areas are experiencing stagnation or decline.

The northern half of Appalachia had a disproportionate share of the nation's declining industries that did not survive the 1981 to 1983 recession, or barely survived it after drastically cutting jobs. The dollar's dominance of world currencies encouraged imports at the direct expense of Appalachian exports in primary and fabricated metals, wood products, chemicals, textiles and apparel, glass and coal. A decline in world oil prices reduced the demand for Appalachian coal. These factors affected some counties more than others.

Counties that have economies that are tied to urban centers in the Region or healthy economic centers outside around the edge of the Region are faring much better than the counties with rural-based or declining-industry-based economies. Most of the growing counties are located in Georgia, North Carolina and South Carolina, with a few found in Alabama and Mississippi, where there has been strong economic growth in the sunbelt and a large number of newly created service jobs that were not adversely affected during the last recession.

The majority of the counties that are not growing or that have declining economies are found in northern Tennessee, Kentucky, West Virginia, Ohio and Pennsylvania. There is a large concentration of economically distressed counties in this area.

The counties in the southern part of Appalachia compare favorably with the nation's most well-off counties. The counties in the north do not. When population, income and unemployment rate changes since 1980 are compared for all the counties in the nation, only nine Appalachian counties north of Tennessee and North Carolina fall in the top one-fifth of the nation's counties.

Appalachia has 397 counties or 12.9 percent of the nation's counties. Commission studies indicate that when the nation's counties are ranked in five categories, Appalachia has 17 counties in the economically most well-off top one-fifth, 55 counties in the second fifth, 70 counties in the third, 102 in the fourth and 158 counties in the economically worst-off bottom fifth. If the Appalachian counties were equally distributed, there would have been 80 counties in each of the five categories.

When viewed as a whole, there are signs that the Region's economy is coming back from the peak recession years. The unemployment rate for Appalachia in September 1985 was 8.4 percent compared to a national rate of 6.9 percent, a difference of 1.5 percentage points. In September 1984, the Appalachian unemployment rate was 9.3 percent, 2.2 percentage points higher than the national unemployment rate of 7.1 percent.

Industrial diversification continues, with increased emphasis on trades and services reflecting the national trend. In the first four years of this decade, the Region gained 300,000 new jobs in this sector.

But at the same time, Appalachia lost an equal number of jobs in manufacturing, mining and construction. The Region's population and employment growth lag behind the nation's. The overall result is that, while parts of the Region are still growing, it does not mirror the national performance.

While the finish-up program outlined certain specific activities, such as highway completion, job creation and finishing the health care network, it has also provided ARC the flexibility to react swiftly to changes in the economy since 1980.

The Commission has been able to direct resources to meeting several critical long-range needs through such programs as:

- Helping the Appalachian States to retrain and educate workers in basic skills to meet the job demands of restructured manufacturing industries as well as new service and high technology manufacturing industries by equipping training facilities and providing technical assistance in curriculum development.

- Helping to build new markets for Appalachian exports of basic products such as wood and coal by providing extensive market surveys designed for use especially by medium and small producers of these products. The wood study was distributed at a Commission-sponsored wood products conference in Mississippi in October 1984 and the coal studies were provided to the Kentucky Coal Summit Conference in April 1985.

- Launching a major initiative against a pervasive problem directly affecting the Region's economic health--the high rate of school dropouts--by commissioning the first regionwide study of the problem, holding a major regionwide workshop on school dropouts in Atlanta in June 1985 and initiating a matching grant program to encourage community-based projects in dropout prevention.

The task ahead is to continue the efforts outlined in the December 1981 Report to Congress from the Appalachian Governors. The twin goals of that report were to, "maintain the momentum of economic progress in Appalachia. . .and. . .support a transition in Appalachia from dependence on ARC to a capability to continue economic progress without further ARC funding."

The basic health care program was completed in 1985 and has been phased out. Among the tasks ahead are:

- Providing the labor force with retraining and education in basic skills to meet job requirements in restructured manufacturing industries as well as in new service and high technology manufacturing industries.
- Development of new enterprises, especially those in services and other fast-growing industries.
- Retention of basic industries and other enterprises by helping them build and maintain strong competitive positions in domestic and foreign markets.
- Completing or placing under construction by FY 1987 a total of 2,060 miles of the 2,477 miles included in the revised and scaled back Appalachian Development Highway System.

The budget presented here will assist the Governors of the Appalachian States in meeting these challenges. A comparison of the budget requests under the Governors' Finish-Up Program and funds provided immediately follows.

The budget data presented herein for FY 1986 is based on the appropriation for FY 1986 as enacted by the Congress in the fall of 1985. As the 1987 budget was in preparation the Administration was expected to propose a rescission of $81 million of the $122.2 million appropriated and estimates that a $5,255 thousand sequestration would be required under the Gramm-Rudman-Hollings Act. Tables showing the impact of those reductions by program follow.

COMPARISON OF GOVERNORS' PROGRAM WITH APPROPRIATIONS

	(millions of dollars)				
	Highway	Area Development	LDD & Technical Assistance	Total Program	Comm. Admin.
FY 1983:					
Governors' Program	$215.0	$ 78.0	$ 5.0	$ 298.0	$2.90
Appropriation	115.1	45.0	5.0	165.1	2.90
FY 1984:					
Governors' Program	215.0	78.0	5.0	298.0	2.75
Appropriation	109.4	45.0	5.0	159.4	2.70
FY 1985:					
Governors' Program	234.0	78.0	5.0	317.0	2.50
Appropriation	100.0	44.0	5.0	149.0	2.30
FY 1986:					
Governors' Program	234.0	70.0	5.0	309.0	2.30
Appropriation	85.0	31.5	3.5	120.0	2.20
TOTAL THRU 1986:					
Governors' Program	898.0	304.0	20.0	1,222.0	10.45
Appropriation	409.5	165.5	18.5	593.5	10.10
Governors' Program amounts not appropriated:	488.5	138.5	1.5	628.5	0.35

FY 1986 APPROPRIATIONS AND PROPOSED RESCISSION

Program	(Thousands of Dollars) Appropriated	Proposed Rescission	Program After Rescission
Highways:			
Development Highway	$ 94,457	$-59,400	$ 35,057
Access Roads	8,161	---	8,161
Administration and Special Planning	1,365	---	1,365
Obligation	103,983	-59,400	44,583
From Prior year balance	-18,983	---	-18,983
Appropriation	$ 85,000	$ 59,400	$ 25,600
Area Development:			
Jobs and Private Investment	$ 36,700	$-19,200	$ 17,500
Distressed Counties	11,500	-2,400	9,100
Health Finish-Up	---	---	---
Administration	800	---	800
Subtotal	49,000	-21,600	27,400
Less Savings	-7,112	---	-7,112
Projects in transit	+6,639	---	+6,639
Obligations	48,527	-21,600	26,927
From prior year balance	-17,027	---	-17,027
Appropriation	$ 31,500	$-21,600	$ 9,900
LDD & Technical Assistance:			
LDD Assistance	$ 3,000	$ ---	$ 3,000
Technical Assistance	1,595	---	1,595
Obligations	4,595	---	4,595
From prior year balance	-1,095	---	-1,095
Appropriation	$ 3,500	$ ---	$ 3,500
Salaries & Expenses:			
Federal Co-Chairman	$ 450	$ ---	$ 450
Commission Administrative Expenses	1,750	---	-1,750
Appropriation	$ 2,200	$ ---	$ 2,200
Summary:			
Total Obligation	$ 159,305	$-81,000	$ 78,305
Less prior year balance	-37,105	---	-37,105
Appropriation	$ 122,200	$-81,000	$ 41,200

EFFECT OF GRAMM-RUDMAN-HOLLINGS ON 1986 APPROPRIATIONS

Program	(Thousands of Dollars) 1986 Appropriation	Proposed Sequestration	Program After Sequestration
Highways:			
Development Highway	$ 94,457	$ 3,310	$ 91,147
Access Roads	8,161	300	7,861
Administration	1,365	45	1,320
Obligations	103,983	3,655	100,328
From prior year balance	-18,983	---	-18,983
Appropriation	$ 85,000	$ 3,655	$ 81,345
Area Development:			
Jobs and Private Investment	$ 36,700	$ 1,175	$ 35,525
Distressed Counties	11,500	145	11,355
Health Finish-Up	---	---	---
Administration	800	35	765
Subtotal	49,000	1,355	47,645
Less Savings	-7,112	---	-7,112
Projects in transit	+6,639	---	+6,639
Net Obligations	48,527	1,355	47,172
From prior year balance	-17,027	---	-17,027
Appropriation	$ 31,500	$ 1,355	$ 30,145
LDD & Technical Assistance:			
LDD Assistance	$ 3,000	$ ---	$ 3,000
Technical Assistance	1,595	150	1,445
Obligations	4,595	150	4,445
From prior year balance	-1,095	---	-1,095
Appropriation	$ 3,500	$ 150	$ 3,350
Salaries & Expenses:			
Federal Co-Chairman	$ 450	$ ---	$ 450
Commission Administrative Expenses	1,750	95	1,655
Appropriation	$ 2,200	$ 95	$ 2,105
Grant Total:			
Total obligated, net	$ 159,305	$ 5,255	$154,050
From prior year balance	-37,105	---	-37,105
Total Appropriation	$ 122,200	$ 5,255	$116,945

TOTAL OPERATING BUDGET

		(Thousands of Dollars)		
		1985 Actual	1986 Enacted	1987 Estimate
1.	Appropriations:			
	Appalachian Regional Development Programs	$ 149,000	$120,000	$309,000
	Salaries and Expenses	2,300	2,200	2,200
	Total Appropriation	$ 151,300	$122,200	$311,200
2.	Other Funding Sources:			
	States Contribution to Commission Admin. Expense	$ 1,850	$ 1,750	$ 1,750
	States' Washington Office	320	325	325
	Advances and Reimbursements	400	500	500
	Repayment of Housing Loans	---	2	---
	Recovery of Prior Year Obligations	8,206	7,112	---
	Total, Other Funding	$ 10,776	$ 9,689	$ 2,575
3.	Use of Prior Year Funds:			
	A. Unobligated Balances Brought Forward:			
	Appropriations:			
	Deferred	$ 10,000	$ 10,000	$ 10,000
	Approved, not obligated	13,577	8,182	---
	Other balances	10,702	30,710	---
	Other Funds	2,853	2,368	907
	Subtotals	$ 37,132	$ 51,260	$ 10,907
	B. Unobligated Balances Carried Forward:			
	Appropriations:			
	Deferred	$ -10,000	$-10,000	$-10,000
	Approved, not obligated	-8,182	---	---
	Other balances	-30,710	---	---
	Other Funds	-2,368	-907	-27
	Subtotals	$ -51,260	$-10,907	$-10,027
	C. Unobligated Balances Used	$ -14,128	$+40,353	$ +880
4.	Total Obligations, Gross	$ 147,948	$172,242	$314,655

PROPOSED APPROPRIATION LANGUAGE

APPALACHIAN REGIONAL DEVELOPMENT PROGRAMS

For expenses necessary to carry out the programs authorized by the Appalachian Regional Development Act of 1965, as amended, notwithstanding section 405 of said Act, except expenses authorized by section 105 of said Act, including services as authorized by section 3109 of title 5, United States Code, and hire of passenger motor vehicles, to remain available until expended, $309,000,000 of which $234,000,000 shall be available for the Appalachian Development Highway System; and for necessary expenses of the Federal Co-Chairman and the alternate on the Appalachian Regional Commission and for payment of the Federal share of the administrative expenses of the Commission, including services as authorized by section 3109 of title 5, United States Code, and hire of passenger motor vehicles, an additional $2,200,000.

Explanation:

The proposed appropriation language is in the same form as that enacted for FY 1986. The sole changes are in the differing amounts requested in total and for the highway program, and the deletion of language on transfer of unobligated balances.

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM

	(thousands of dollars)			
	1985 Actual	1986 Enacted	1987 Request	Change from 1986
Appropriation	$100,000	$ 85,000	$234,000	$+149,000
Obligations, net	83,286	103,983	234,000	+130,017

Budget Request

The amount of $234 million is requested as the 1987 appropriation to provide for progress on the scaled-back Appalachian development highway plan included in the Appalachian Governors revised program. This plan envisioned construction of 733 remaining miles of 2,477 miles included in the revised development plan initially adopted in 1981 by the Appalachian Governors. The funds requested here for 1987 would be used to assist the Appalachian States in contracting for construction, right-of-way purchase and engineering of a portion of some 495 miles remaining for construction as of September, 1985. At that date, 1,982 of the 2,477-mile plan had been contracted for construction of which 1,862 miles had been completed and open to traffic. The budget request includes $220.7 million for the development highway system, $12 million for local access roads essential to local area economic development, and $1.3 million for costs incurred by the Federal Highway Administration and ARC in administering the highway program.

Governors' Highway Program Revision of 1981

In mid-1981 the House appropriations committee, in the report accompanying its recommendations for the FY 1982 appropriations bill, directed the ARC to submit a report to Congress by December 31, 1981, that would include recommendations for the completion of the Appalachian Development Highway System.

The Commission's recommendations were included in an unanimously approved Appalachian Governors' Resolution of November, 1981, which called for an Appalachian Development Highway program of scaled-down mileage and funding ceiling, with funding to be completed within eight years. The revised highway program, including recent additional commitments by States for the use of non-Appalachian funds, consists of the following:

- Funding assistance will be limited to completion of 733 miles of the approximately 1,300 miles not constructed on the planned system. About 181 miles would be completed substantially with State funds and 552 miles with Federal funds, resulting in completed corridor construction of 2,477 miles, or about 82 percent of presently authorized mileage.

- Federal financial assistance will continue at the current 80 percent Federal matching rate and would not exceed $2.27 billion over the eight-year period ending in 1992.

- The 733 additional miles to be completed during this period are those uncompleted or partially completed segments of the system in each State which carry the highest overall traffic, those segments expected to carry the largest volumes of coal by the late 1980's, those segments which contribute most to regional economic development opportunities, and those which would eliminate the most restrictive gaps in continuity. Additionally, they also include those segments considered to be the most critical state-line crossings.

- The eligible segments have been identified in each State and will be constructed within individual State construction priorities.

-- States will be encouraged to build additional segments of the system using State highway financing resources. The priority list includes highway projects nearly $1,070 million in excess of proposed ARC funding which the States intend to finance by non-ARC means during the proposed finish-up period.

-- Annual allocations by State will continue to be made and all States are being encouraged to maximize progress and minimize costs through use of pre-financing and loans of allocations between States.

-- The local access road program would be continued for five years and funded at $12 million annually.

The revised highway program would leave unimproved about 18 percent of the previous system authorized by the Congress. Full funding through 1992 would require $2.27 billion in Federal funds as compared with $7.1 billion to complete the entire system. The entire program, when completed, would greatly assist the region in its economic development by:

-- completing over three-fourths of the previously authorized system for a total of 2,477 miles. (1,982 miles now complete or under construction.)

-- complete 150 miles of presently unbuilt segments carrying the largest volumes of coal. (24.3 miles under construction.)

-- complete 21 of 26 planned state-line crossings attesting to the regionality of the program. The remaining 5 state-line crossings are otherwise adequate or served by an alternate route for 1992 traffic projections. (13 complete or under construction.)

-- with completion the status of the 25 corridors would be as follows with respect: (1) to completion to forecast traffic density; (2) to average 50 miles per hour travel speed; and (3) to current Federal highway safety standards:

12 corridors complete or virtually complete (currently 5)

5 additional corridors with at least 80 percent mileage built (currently 5)

4 additional corridors with 60 to 80 percent of mileage completed (currently 7)

4 corridors less than 60 percent completed. (currently 8)

Five corridors are currently completed. They are "I" in Kentucky from Whitesburg to Winchester (126.2 miles), "L" in West Virginia from Beckley to Sutton (69.7 miles), "R" in Kentucky from Compton to Prestonburg (Kentucky Mountain Parkway-existing route), "B-1" from Greenup, Kentucky to Portsmouth, Ohio (12.6 miles) and Corridor "P" from Mackeyville to Milton, Pennsylvania (59.5 miles).

The finish-up plan would complete Corridor "E" from Morgantown, West Virginia to Hancock, Maryland (111.1 miles), Corridor "G" from Pikeville, Kentucky to Charleston, West Virginia (106.8 miles), Corridor "N" from Corridor "E" in Maryland to Ebensburg, Pennsylvania (68.1 miles), and Corridor "W" from Greenville, South Carolina to Hendersonville, North Carolina (39.7 miles). In addition, Corridor "D" from Cincinnati, Ohio to Bridgeport, West Virginia would be 98 percent complete (245 miles) as would Corridor "X" in Alabama and Mississippi (104.5 miles), and Corridor "T" from Erie, Pennsylvania to Binghamton, New York (242 miles) will be about 96 percent complete, with the remaining portions consisting of 4-lane highway.

Although Corridor "B" would be only 84 percent complete from its termini at Asheville, North Carolina to Portsmouth, Ohio (295 miles), those portions of Corridor "B" in Kentucky, Virginia and North Carolina would be complete.

The corridors which were not fully constructed would still serve an important transportation function. The major difficulty would be that long stretches of modern improved roadways would be interspersed with shorter, less improved segments on which traffic could not move at the 50 mile per hour average rate on the improved sections. Progress would also be made on those highway corridors in Alabama and Mississippi which had a late start as approved Appalachian corridors.

In March 1981, the Administration proposed to the Congress a five-year funding level for continuation of the Appalachian Development Highway System with funding to come solely from the Highway Trust Fund. The ARC highway finish-up program reflected the level of funding proposed by the Administration, adjusted to begin in FY 1983, and added three years of additional authorization at similar rates to coincide with the time frame proposed by the Administration to complete the Interstate System. The present finish-up plan began in 1983 and would end in 1992. Through FY 1986 $409.5 million of the required $2,270 million had been appropriated. This amounts to only the first two-years of the Governors proposed program.

Budget and Program Comparative Data

The development highway program includes three sub-programs with funding as follows:

	Cumulative Obligation (millions of dollars)		
	Thru 1985 Actual	Thru 1986 Enacted	Thru 1987 Estimate
Development Highways	$2,980.6	$3,075.0	$ 3,295.7
Access Roads	186.8	195.0	207.0
Administration & Special Planning	25.7	27.1	28.4
Total	$3,193.1	$3,297.1	$ 3,531.1

	Annual Obligation Amounts (thousands of dollars)		
	1985 Actual	1986 Enacted	1987 Estimate
Development Highways	$ 76,618	$ 94,457	$ 220,700
Access Roads	5,275	8,161	12,000
Administration & Special Planning	1,393	1,365	1,300
Subtotal, Net	83,286	103,983	234,000
Balance from prior year	-2,269	-18,983	---
Balance to future year	18,983	---	---
Appropriation	$100,000	$ 85,000	$ 234,000

Highway programs generally measure their accomplishments in terms of miles completed or placed under construction. In these terms, the program has placed under construction or partial construction 1,982 of the 2,477 miles for the revised development corridor system, with an anticipated 2,060 miles placed under construction through FY 1987. As with many other programs, the number of miles constructed for a given number of dollars has decreased sharply since the program was initially authorized due to inflation and revised standards. Miles constructed, however, do not really measure the impact of the development highway system as its increasing completion operates to open the region for development and for the improvement of the condition of its inhabitants.

The record now makes clear the basic importance of the highways to the economic development of the Region. Even though the full system is now only slightly more than half complete, the Appalachian Development Highway System impacts are already considerable:

- Industries and businesses have grown along the highways;
- Enterprises not directly along the highways were strengthened by the dramatic opening up of the Region by the highway system;
- The Appalachian Development Highway System is a vital link in moving Appalachian coal to domestic and foreign markets; and
- The costs and difficulty of extending health, education and other services in the Region were reduced by the highways.

During 1981 ARC surveyed the 13 Appalachian States and the 69 local development districts in Appalachia to assess the impact of the highway system. The surveys provided the most accurate count ever taken of the industries located on or near the Appalachian Development Highway System corridors. The surveys showed that since 1965, when the corridor system was first announced, 182,700 jobs have been created in 801 manufacturing plants with 50 or more employees within 30 minutes of the corridors. Added to this is an estimated 32,300 jobs in smaller plants for a total of 215,000 jobs. Standard projections of one service job created for each manufacturing job suggest that 215,000 jobs in retail trade, commercial establishments and various services have been opened up along the corridors, for a total of over 430,000 jobs.

The requested funds will finance a program which by September 30, 1987, is anticipated to result in a total of 2,060 development highway miles and 870 access road miles either contracted for construction or already completed. Adding the additional mileage for which right-of-way acquisition will have been obligated, there will be by the close of FY 1987 a total of an estimated 2,270 development highway miles with obligation commitments. The following table summarizes the current and projected status of highway mileage construction as compared with the maximum mileage now authorized under the Appalachian Act and the mileage included in the revised Commission plan.

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM

	Status of September 30, 1985				
	Miles in Category	Cumulative Miles	%	Miles Est. Sept. 1986	Miles Est. Sept. 1987
Construction completed	1,865.8	1,865.8	75.5	1,900	1,950
Construction underway	116.4	1,982.2	80.0	2,010	2,060
ROW in process*	221.5	2,203.7	88.9	2,230	2,270
Design begun*	360.8	2,564.5		2,600	2,650
Total eligible for construction		2,477.3	100.0	2,485	2,485
Total authorized by Congress		3,025.0		3,025	3,025

* Includes 33 miles of right-of-way and 210 miles of design not eligible for construction assistance under revised Commission plan.

Program Background

One of the major factors which contributed to Appalachia's relative economic stagnation was its isolation. This isolation resulted primarily from the difficulties of transport in a rugged region. Roads have been expensive to build and, as a result, roads were built to "follow the topography" in order to minimize costs. Consequently, major national transportation arteries were built to bypass Appalachia rather than go through it despite its large population. Thus, what evolved in Appalachia was a system of winding roads following stream valleys and troughs between the mountains. In general, these roads were, more often than not, narrow two-lane roads that could be squeezed into the limited available space. The resulting system, characterized by low travel speeds, long travel distances due to the winding roadway pattern, unsafe roads built to poor design standards, short sight distances, and extremely high construction costs, profoundly discouraged commerce and industrial development. With the exception of some communities located on major east-west routes, most Appalachian communities were not able to compete for large employers due to poor access to national markets and because commutation was so difficult that the size of available labor pools was severely limited by the transport system itself.

In response to these conditions, Congress in 1965 authorized construction of the Appalachian Development Highway System to connect major federal highway arteries and open areas of dense population ignored by interstate routes. The Act authorized "construction of an Appalachian Development Highway System serving the Appalachian Region which, in conjunction with the interstate system and other federal-aid-highways in the Region, will provide a highway system which will open up an area or areas with a developmental potential where commerce and communication have been inhibited by lack of adequate access."

Construction of the Appalachian system, complementary to the interstate routes previously authorized by the Congress, is regarded by the Commission as the key to an accelerated rate of economic growth in the Region. The designated system serves to encourage the location of new industrial and commercial enterprises in the Region. Of equal significance is the fact that many of these highways facilitate commutation from rural but heavily populated areas to jobs in the major communties and cities.

Within the authorizations provided by the Congress, the Commission acts to provide planning allocations to each State in both the development highway and access roads programs in advance of the appropriation. With this advance notice of the approximate amount of funds which will be available, States are better able to plan their future construction needs and to initiate, at an earlier time, the design work and right-of-way acquisition necessary before construction can begin. The following table summarizes the allocations of authorizations by the major highway subprograms, dependent upon the receipt of appropriations. These funds are further allocated among the States, but can be adjusted among States so that unused allocations may be utilized by another State which is ready to proceed with construction. The Commission's highway allocation procedure provides incentives for States to more rapidly commit their highway funds. Under this procedure, as much as 30 percent of a lagging State's annual allocation can be transferred without repayment to others who are in a position to commit these funds on their portion of the Appalachian highway system. This aids in assuring continued progress in getting various portions of the system underway.

	Authorizations and Allocations (millions of dollars)		
	Thru 1985	Thru 1986	Thru 1987
Cumulative Authorization	$3,464.5	$3,549.5	$ 3,783.5
Less Authorizations lapsing	-252.4	-252.4	-252.4
Appropriations:			
Cumulative	3,212.1	3,297.1	3,531.1
Current Year	100.0	85.0	234.0
Allocations by Program: (Cumulative)			
Development Highways	2,981.5	3,063.0	3,294.7
Access Roads	203.1	206.2	207.0
Administration & Special Planning	27.5	27.9	29.4
Total	$3,212.1	$3,297.1	$ 3,531.1

The allocation of these amounts to the States is shown on Table I, following. As indicated in that table, the Commission makes several allocations to the States and has adopted a system of allocations with major principles as follows:

-- In order to provide advance notice to States on probable funds that will be available to each State the Commission has, after each new authorization, allocated funds for both the development highway and access road programs by State through the period of new authorization. Presently these allocations, based upon appropriations to date and the Governors' program, have been projected through FY 1987.

-- Based upon actual appropriations, ARC issues final allocations at the beginning of each fiscal year. Each State's final allocation consists of two portions: a base allocation consisting of 70 percent of the total; and a supplemental allocation consisting of the remaining 30 percent.

-- To assure continued progress on the highway system, States able to utilize more than their total allocation are permitted to do so if other States are not able to use all of their allocation.

The system has worked well in encouraging a faster pace of construction among the States. In the last six years, virtually all available highway appropriations have been obligated. At the same time, highway construction prefinanced by the States, which was nonexistent in 1976, rose to $117 million in 1979, $141 million in 1983, and $153 million at the close of 1985.

TABLE I

APPALACHIAN HIGHWAY PROGRAM OBLIGATION NEEDS
State by State Summary
(thousands of dollars)

	Planning Allocation thru 1987	Obligated thru 1985	Estimated State Capabilities thru 1986	Estimated Obligations thru 1986	Estimated Obligations thru 1987
Development Highways:					
Alabama	$ 149,388	$ 108,783	$ 128,410	$ 125,500	$ 149,500
Georgia	99,677	87,007*	128,002	89,500	99,700
Kentucky	519,160	481,466*	563,495	492,000	519,300
Maryland	137,354	122,910	132,834	126,000	137,400
Mississippi	104,556	81,844*	109,250	93,000	104,600
New York	285,723	262,669*	310,863	267,600	285,800
North Carolina	154,171	145,552	146,268	147,300	154,200
Ohio	126,291	117,498*	132,348	119,300	126,300
Pennsylvania	530,078	478,048	509,237	492,500	530,200
South Carolina	16,288	12,523*	13,530	13,300	16,300
Tennessee	346,322	319,148*	334,260	325,100	346,400
Virginia	136,531	127,337	145,737	129,200	136,600
West Virginia	689,194	635,816	695,910	654,759	689,459
Subtotal	3,294,733	2,980,601	3,350,144	3,075,059	3,295,759
Access Roads	207,000	186,839	195,924	195,000	207,000
FHWA-Admin.-Misc.	29,400	25,709	27,074	27,074	28,374
TOTAL	$3,531,133	$3,193,149	$3,573,142	$3,297,133	$3,531,133
Appropriations Available		3,212,133	3,297,133	3,297,133	3,531,133
Amount Prefinanced	---	152,533	180,000	160,000	110,000
Unobligated Balances	---	18,983	---	---	---
Estimated Additional State Capabilities		---	96,009	---	---

*Additional prefinanced amounts.

Georgia	40,772
Kentucky	77,198
Mississippi	2,999
New York	12,935
Ohio	14,850
S. C.	507
Tennessee	3,272
Total	152,533

TABLE II

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM

MILEAGE SUMMARY

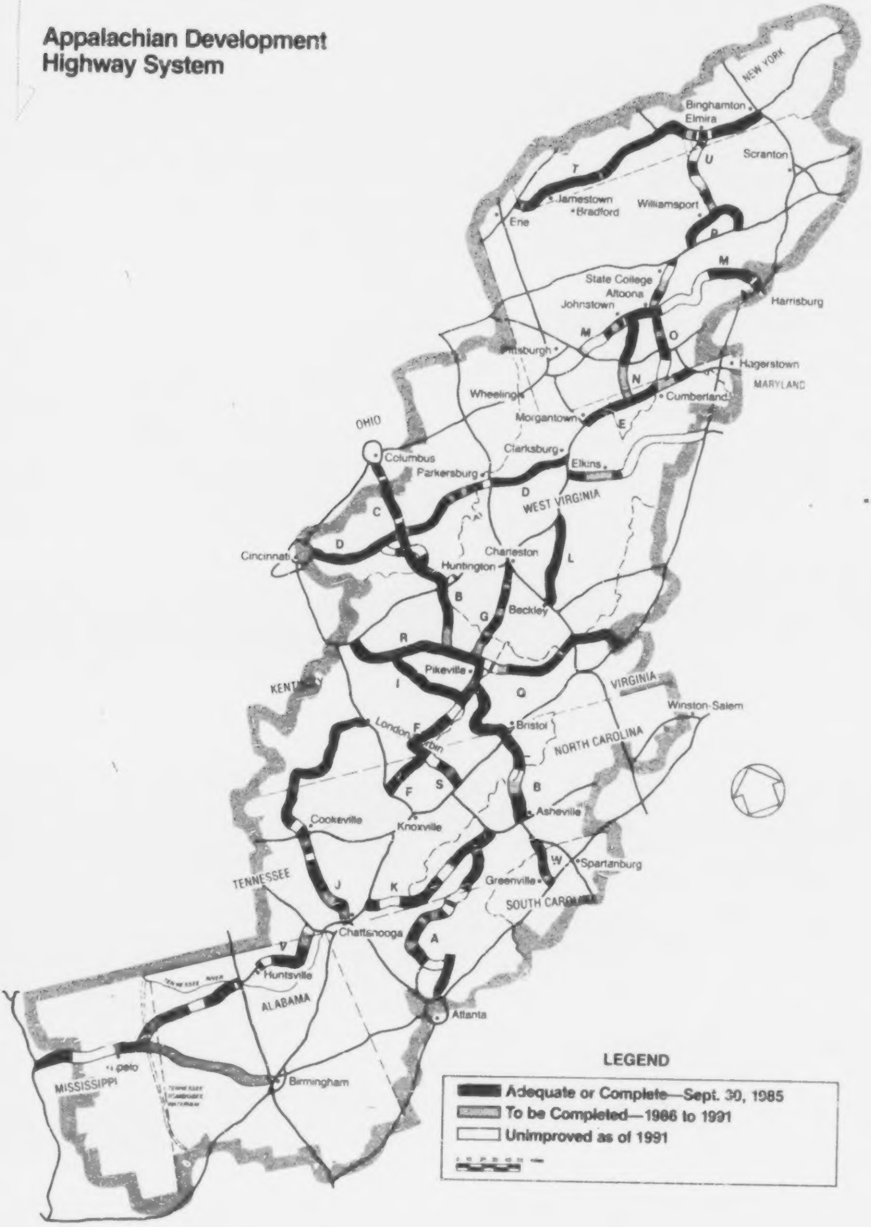
			CUMULATIVE STATUS AS OF SEPTEMBER 30, 1985			
State	Total Corridor	Eligible for Construct.	Design, RW Construct. completed or underway*	RW Construct. completed or underway	Construct. completed/underway**	Construct.*** completed
Alabama	253.5	205.5	199.4	109.8	96.1	75.3
Georgia	137.2	111.7	134.7	105.2	90.9	71.6
Kentucky	581.6	396.8	416.2	387.8	345.9	343.9
Maryland	85.4	77.8	75.3	59.3	59.3	56.7
Mississippi	119.8	85.9	101.5	75.9	57.3	46.7
New York	255.3	204.1	205.9	199.8	199.8	179.6
North Carolina	205.9	175.1	172.4	164.2	156.8	153.4
Ohio	293.5	168.4	177.8	150.3	140.1	139.8
Pennsylvania	509.0	288.7	292.3	225.7	192.4	181.3
South Carolina	30.7	22.9	22.9	16.5	15.3	15.3
Tennessee	342.2	261.1	286.6	253.2	214.3	196.6
Virginia	201.6	166.4	157.4	157.4	153.2	147.4
West Virginia	423.5	312.9	322.1	298.6	260.8	258.2
TOTAL	3,439.2	2,477.3	2,564.5	2,203.7	1,982.2	1,865.8
Estimated Status						
September 30, 1986			2,600	2,230	2,010	1,900
September 30, 1987			2,650	2,270	2,060	1,950

* Includes 210 miles design and 33 miles of right-of-way in previously authorized mileage not in revised ARC plan.

** Includes 48 miles of construction prefinanced by States.

*** Includes completion of partially constructed segments, e.g., two lanes paved. Of the total completed mileage 1,862 miles have been opened to traffic.

Appalachian Development Highway System


NEW YORK
Binghamton
Elmira
Scranton
Jamestown
Bradford
Erie
Williamsport
State College
Altoona
Johnstown
Harrisburg
Pittsburgh
Hagerstown
MARYLAND
Wheeling
Cumberland
Morgantown
OHIO
Columbus
Clarksburg
Parkersburg
Elkins
WEST VIRGINIA
Cincinnati
Charleston
Huntington
Beckley
Pikeville
KENT
VIRGINIA
Winston-Salem
Bristol
London
Corbin
NORTH CAROLINA
Asheville
Cookeville
Knoxville
Spartanburg
TENNESSEE
Greenville
SOUTH CAROLINA
Chattanooga
Huntsville
ALABAMA
Atlanta
Tupelo
MISSISSIPPI
Birmingham
T
U
P
M
O
N
E
D
C
L
G
B
R
I
Q
F
S
J
K
A
W
V
LEGEND
Adequate or Complete—Sept. 30, 1985
To be Completed—1986 to 1991
Unimproved as of 1991

Access Road Program

The Commission's access road program has been an essential ingredient in the Commission's program to assist economic development in the region. Unlike the development highway program which is an entire system planned in advance, the access road program consists of individual projects to meet specific local needs separately submitted by the States and individually approved by the Commission. Access roads are projects that must have an economic relevance that can be demonstrated which provide essential access to an industrial site or park, an educational or health facility, or to a commercially important timber production area. They are normally two-lane facilities -- less than one or two miles or a bridge — with Federal assistance of up to 80 percent of total cost.

Since passage of the Appalachian Act of 1965, the Commission has allocated up to a maximum of $224 million through FY 1987 for local access roads and designated development access roads. The Act presently authorizes up to 1,400 miles of access roads. About 990 miles are expected to be approved through FY 1987.

To meet requirements in several States for special access roads not included in the current access road allocations, the Commission had authorized a limited utilization of development highway allocations for special development access roads to be individually approved by the Commission. To be eligible for approval, a development access road was to meet a high regional priority, such as the facilitation of energy development or the provision of service to multi-state or other development projects of high regional significance, and possess significant prospects for providing high "benefit-cost" yields in terms of new job opportunities. The Commission also authorized States needing additional authorization to receive portions of authorizations unused by other states. States receiving authorization must fund the projects from their own development highway allocations. As projects were approved, the allocations were transferred to the access road program for program accounting.

After the individual access road projects are approved by the Commission, the projects are obligated by FHWA when the State or local government is authorized to proceed with the work. Since design and right-of-way acquisition precede advertising for bids for actual construction, there is a considerable time lag before funds are obligated. Table III indicates by State the status of the programs. Through September 30, 1985, 413 projects with a total cost of $278 million including ARC assistance of $203 million had been approved, of which $187 million has been obligated. Some 783 miles of access road projects were completed, and an additional 38 miles were underway.

Summary of Access Road Approvals and Obligations:

(thousands of dollars)

	Thru 1985 Actual	Thru 1986 Estimate	Thru 1987 Estimate
Approved Projects	$203,394	$205,000	$ 207,000
Obligated Projects	$186,839	$195,000	$ 207,000
Annual Obligations	$ 5,275	$ 8,161	$ 12,000

TABLE III

APPALACHIAN ACCESS ROAD PROGRAM FINANCING AND ACCOMPLISHMENTS

(thousands of dollars)

	Planning 1/ Allocation Thru FY 1987	Approved Projects 9/30/85	Cumulative Obligations Thru 9/30/85	Estimated Obligations Thru FY 1986	Estimated Obligations Thru FY 1987
Alabama	$ 28,405	$ 28,405	$ 27,996	$ 28,403	$ 28,405
Georgia	13,302	12,358	12,358	12,358	13,302
Kentucky	7,681	6,596	6,395	6,642	7,681
Maryland	5,176	4,270	4,245	4,277	5,176
Mississippi	27,043	32,589	25,315	26,332	27,043
New York	9,982	9,809	9,158	9,158	9,982
North Carolina	10,563	8,783	6,738	9,646	10,563
Ohio	9,064	8,332	7,602	8,255	9,064
Pennsylvania	29,588	29,109	26,888	28,249	29,588
South Carolina	17,926	17,013	15,946	16,813	17,926
Tennessee	22,439	22,084	21,751	21,751	22,439
Virginia	8,200	7,018	6,103	6,926	8,200
West Virginia	17,631	17,027	16,344	17,114	17,631
Subtotal	207,000	203,394	186,839	195,924	207,000
Less Slippage	---	---	---	-924	---
TOTAL	$ 207,000	$ 203,394	$ 186,839	$ 195,000	$ 207,000

STATUS OF MILEAGE

	Through 9/30/85	Sept. 30, 1986	Sept. 30, 1987
Miles Completed	783	810	830
Construction underway or completed	821	840	870
Miles approved	972	980	990

Statutory limitation on miles — 1,400

1/ Including $30,721 thousand for Development Access Roads

Administrative and Other Costs

Administrative and other planning costs to be incurred through FY 1987 are estimated to be $28.4 million. Administration of the program is primarily through the Federal Highway Administration which handles the details of the construction program. For this purpose, the program finances a staff of 19 persons, primarily in the field offices of the Federal Highway Administration. During FY 1987, administrative costs are estimated at $1.3 million of which $1,091 thousand provides for project administration of the program in the Federal Highway Administration and $115 thousand for staff and computer costs at ARC.

STANDARD FORM 304
May 1969, Bureau of the Budget
Circular No. A-11, Revised.
304-103

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM
Administration and Planning
FHWA (unless otherwise indicated)

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code		19 85 actual	19 86 estimate	19 87 estimate
	Personnel compensation:			
11.1	Permanent positions	593	714	724
11.3	Positions other than permanent	---	---	---
11.5	Other personnel compensation	20	20	20
	Total personnel compensation	613	734	744
	Personnel benefits:			
12.1	Civilian	74	88	89
21.0	Travel and transportation of persons	82	86	90
22.0	Transportation of things	---	---	---
23.3	Communications, utilities and miscellaneous charges	10	10	11
24.0	Printing and reproduction	---	---	---
25.0	Other services	154	155	154
26.0	Supplies and materials	3	3	3
99.0	Total obligations FHWA	936	1,076	1,091
	ARC Staff & Computer Services	110	115	115
	State Planning Contracts	62	110	---
	Contingency and Other	285	64	94
	Total Obligations	1,393	1,365	1,300
	Personnel Summary (FHWA):			
	Total No. of permanent positions	19	19	19
	Total compensable work-years	17	20	20
	Average GS grade	11.44	11.44	11.44
	Average GS salary	$37,350	$37,664	$37,919

U.S. GOVERNMENT PRINTING OFFICE : [illegible]

AREA DEVELOPMENT PROGRAM

(thousands of dollars

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
Appropriations	$ 44,000	$ 31,500	$ 70,000	$ +38,500
Obligations, net	53,748	48,527	70,000	+21,473

Note: Includes effect of proposed deferral by Administration of $10 million in 1986.

The 1987 budget request of $70 million is for the fifth year of the "finish-up" Area Development Program submitted by the Governors to the Congress in December 1981. The program had three components; jobs and private investment, distressed counties assistance, and a health finish-up program. The Commission completed the third year of "finish-up" program operations including the last year of the Health Program in FY 1985, and will continue the jobs and private investment and distressed counties assistance program in 1986, although at lower financial levels than the $78 million annually proposed in the Governors' proposal of December 1981. The 1987 request is for $70 million, the program level adopted by the Governors in their 1981 report to the Congress, and reflecting the completion of the health finish-up program in 1985. The following table compares the 1985, 1986 and 1987 programs:

(thousands of dollars)

Program, by type	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
Jobs & Private Investment	$34,108	$ 36,700	$ 54,000	$ +17,300
Distressed Counties	10,648	11,500	15,400	+3,900
Health Finish-Up	3,256	---	---	---
Administration	841	800	600	-200
Subtotal, Approvals	$48,853	$ 49,000	$ 70,000	$ +21,000
Less project savings	-7,332	-7,112	---	7,112
Projects in Transit	+12,227	+6,639	---	-6,639
Net Obligations	$53,748	$ 48,527	$ 70,000	$ +21,473
Financing:				
Obligations	$53,748	$ 48,527	$ 70,000	$ +21,473
From Prior Year Balance	-9,748	-17,027	---	+17,027
Appropriation	$44,000	$ 31,500	$ 70,000	$ +38,500

Budget for 1987

The revised Area Development Program adopted by the Governors of the Appalachian Regional Commission was designed to maintain the momentum of economic progress and support a transition to a capability in Appalachia to continue economic programs without further ARC funding. The revised Area Development Program is concentrated in three special areas with funding for the fifth year of the program as follows:

1. Jobs and Private Investment Program .... $54 million

The funds requested would be allocated among the States for projects critical to the creation or retention of private sector jobs, upgrading manpower for jobs in the Region and attracting private investment. All Appalachian counties are eligible for assistance, and funds will be targeted on those projects with the most immediate payoff with a firm private sector commitment. ARC-financed assistance is not to exceed 50 percent of total project costs.

2. Distressed Counties Program..................... $15.4 million

The past focus of the Commission program has largely been on projects in those geographic areas with the greatest potential for economic development returns. While few of these investment opportunities can be found in the more distressed and undeveloped counties in the Region, the Commission, in its finish-up program, believes it has a responsibility to provide assistance to these counties to give them some basis for hope in the future.

The distressed counties program would provide $15.4 million for a special program to help the most distressed and underdeveloped counties (74) in the Region. These counties, which lack the financial and technical resources for even the most basic public services, need help to meet their most critical needs, especially safe drinking water and waste disposal. ARC financial assistance will be available for up to 80 percent of project costs.

3. Health Finish-Up Program...................... No request.

The Appalachian region has made striking progress since passage of the Appalachian Act in 1965 in reducing infant mortality and extending primary health care, two health program areas established as priorities by ARC. However, not all counties had shared in the improvement of health care in the Region and continued to have health manpower shortages and/or have infant mortality 50 percent or more higher than the national average. The Governors' program to address these deficiencies was completed in FY 1985 and no request has been made for 1986 or 1987.

4. Administration by Other Agencies .... $0.6 million

Since many of the individual projects will be administered by other Federal agencies, an amount of $600 thousand is requested for other agencies' administrative expenses, a decrease of $200 thousand from 1986.

Program Operation in 1987

The finish-up program represents a departure from some aspects of the allocation system initiated with the Area Development program in 1975 and used through FY 1982. Instead of a single allocation for the non-highway programs, States are being provided with separate allocations or targets for the jobs and private investment and distressed counties programs. Within these amounts, each Governor is asked to submit specific, locally sponsored projects--generally developed in cooperation with the multi-county development districts--to the Commission for approval. The health program was developed annually through a special ARC health committee, which developed a detailed project-by-project program for approval by the Governors and Federal Co-Chairman at their regular Commission meetings.

In the Commission area development program, projects are initiated at the State and local level and included in the annual state development plans and investment programs. These plans and investment programs must be approved by the full Commission. The Federal Co-Chairman represents national interest in the Commission's deliberations and decision. By blending in this manner the States' concerns and priorities with national policy, the Commission makes the joint decisions and determinations which constitute the regional development program.

Another group of participants has taken on increasing importance over the Commission's life. During nearly two decades of experience, the multi-county local development districts (LDDs) are proving their capacity to help local governments and citizens share in economic development on this areawide basis. The States rely on the LDDs for local government and citizen participation in their development process. Through representation on LDD boards and participation in their activities, local government completes the Federal-State-local institutional framework of the Commission. Thus, except for a change in the allocation of funds by States representing the desire to target specific amounts for the three separate Commission objectives which are described below, the basic Commission program development and project approval structure will continue.

Jobs and Private Investment Program ($54 million)

Although the Appalachian Region has made strides during the last decade, substantial problems remain which are inhibiting recovery from the economic downturn. Particularly worrisome is the vulnerability of Appalachia's traditional economic base--coal, steel, textiles, apparel, wood, chemicals, and other basic manufacturing industries. To the extent practicable, these industries must be encouraged to modernize plant and management, enhance productivity, and otherwise meet the challenges of off-shore competition, even as the Region seeks diversification into higher growth industrial and service sectors. If Appalachian communities cannot hold onto existing jobs and attract new private sector investment over the next few years, solidifying the gains which have been achieved, the cumulative impact of past public investments in the Region will be lost. The still existing social and economic disparities will widen, and are likely to be compounded as the nation surges into the post-industrial age.

The problems of Appalachia do not recognize State boundaries and generally cannot be resolved solely by the public or private sector, or by a single level of government, be it Federal, State or local. Accordingly, the Appalachian Regional Commission determined that, beginning in FY 1983, the bulk of ARC's non-highway funds would be directed to a Jobs and Private Investment Program in which all Appalachia would be eligible and which would be used to forge public/private approaches so critical to the Region's future. Under this program, ARC would assist the public sector in providing critical infrastructure, training or facilities to secure a private sector commitment to economic development in the community.

For 1987, $54 million is requested for projects in three investment areas:

- creating and retaining jobs where Commission funds are necessary to assure a related private sector commitment for the creation, expansion or retention of jobs in the Region;
- attracting private investments where Commission funds are necessary to assure a specific private investment that will meet a high priority objective substantially enhancing the economic development of the area served; and
- upgrading manpower for regional jobs where Commission funds will initiate or improve training activities to make them more relevant to the current regional job market.

Each project assisted must demonstrate evidence of private sector involvement, such as monetary contributions, donation of space, expertise or equipment, investment in a related project resulting from project activities, or corporate community leadership and involvement in planning or implementing project activities. Projects must also include substantial evidence that intended program benefits will result within a reasonable period of time after project completion.

At the requested appropriation level, the following activities are anticipated:

- Nearly 100 enterprise sites--industrial, commercial, agricultural--will benefit from infrastructure improvements, such as water, sewer, waste treatment, rail spur or industrial site development, financed in part by Commission grants of $24 million. Jobs created or retained as a result of project activities will vary, ranging from 20 to 500 per site. In addition, $4 million will be used by approximately twelve commercial revitalization or other community-based projects designed to involve local businessmen in improving the community business areas. The target for infrastructure projects as a class would be one permanent job per $5,000 in Commission grant money, with private investment of $3 to each $1 in grant funds.

- 55 projects to upgrade vocational training offerings or for customized training to meet specific needs of industry will receive $6 million in grant assistance. Enrollment in assisted courses will range from 40 - 200 per year, for an estimated total of 4,200 students benefitting during first-year operations.

- 1,200 secondary students and adults will acquire skills in reading, writing, computation, or computer literacy training at 25 basic skills centers to be developed with $3 million. The training will enable participants to either seek employment immediately upon completion of the course, or to enroll in suitable vocational education programs to further their employability.

- A total of $4 million will be provided to the States for housing site grants and loans, technical assistance and housing rehabilitation assistance in rural areas, directly resulting in 2,500 units of new or rehabilitated housing with a minimum valuation of $60 million. Additional objectives for housing include greater levels of financing participation from local lending institutions, and strengthened capabilities of Appalachia's small residential construction industry, non-profit housing corporations and state and local housing agencies.

- 30 projects for enterprise development will be partially supported with $9 million in grant funds from ARC. Projects will include assistance for: small business innovation centers and "incubators;" export development and procurement assistance programs, labor management committees; state programs providing liaison and assistance to help plant managers deal with governmental regulations, tax policy, or other problems; and support for enterprise development programs conducted by States and local development districts.

In addition to its activities at the state and local level, the Commission is using the Jobs and Private Investment program along with Commission technical assistance and research to explore various stimuli to economic expansion of the Appalachian Region as a whole, including a strong emphasis on education programs. During 1985 the Commission focused on the pervasive problem of high dropout rates in the Region. To address this problem, the following activities were undertaken:

- The Commission sponsored a workshop on school dropouts in conjunction with the state of Georgia which was attended by more than 200 educators and community leaders. The workshop, which was held in Atlanta, Georgia and hosted by Governor Joe Frank Harris, 1985 ARC States, Co-Chairman, examined the extent of the dropout problem in Appalachia and the long-range effect of educational failure on the Region's economy. It then showcased successful dropout prevention programs and concluded with recommendations on ways to start new programs to replicate this success.

- At its meeting on February 23, 1985, on the occasion of the twentieth anniversary of the ARC, the Commission adopted Resolution 569 which recognized the strategic economic importance of reducing school dropout rates in the Region and which urged focusing both public and private resources on the issue. The Resolution also approved $1,000,000 start-up funding for a special regional initiative in conjunction with the Appalachian Foundation to stimulate the development of community-based programs in areas with high dropout rates.

- ARC funds of $782,750 are being used by Kentucky's Office of the Governor - Department of Local Government to launch a comprehensive program to attack Appalachian Kentucky's student dropout problem.

  This student dropout prevention program includes a one-hour documentary to be produced by the Kentucky Educational Television network combined with a local outreach program for the purpose of creating awareness and action on dropout prevention in Kentucky. In addition, various approaches to dropout prevention will be implemented in 24 of Kentucky's 49 Appalachian counties. Sixteen distressed counties are included: Clay, Clinton, Jackson, Lawrence, Lee, Letcher, Lincoln, Magoffin, McCreary, Menifee, Morgan, Powell, Russell, Wayne, Whitley and Wolfe. The other eight counties included are: Floyd, Harlan, Johnson, Knox, Laurel, Martin, Perry and Rowan.

  The total cost of the program is $1,313,869. The Commonwealth will provide $36,250, the Appalachian Foundation will contribute $40,000 and local sources will provide $454,869.

Examples of infrastructure and other projects funded under the Jobs and Private Investment Program in FY 85 include:

- $75,000 for the Wood Export Marketing Co-op, Inc. to assist in start-up activities of this non-profit wood producers cooperative seeking to enter the wood export market. The Co-op will be providing at least $155,000 in private funds. The Co-op, located at Pickensville, Alabama on the recently completed Tenn-Tom Waterway, is comprised of small and medium sized lumber companies in Appalachian Mississippi and Alabama.

  The approval represents the first ARC investment in a wood export firm created as a result of Commission and state activities to encourage exports of Appalachian goods and services and, specifically, exports of its wood resources. It is, also, a follow-up to the recently completed ARC wood export study and wood conference held in Tupelo, Mississippi. The activity will utilize the recently opened Tenn-Tom Waterway.

- $150,000 in Section 214 funds to the City of Jamestown for site acquisition and industrial renewal and modernization to assist in the consolidation and expansion of Afro-Lecon, Inc., Watson Industries Division. The project consists of land acquisition, relocation, energy saving heating system, demolition/site grading, and administrative costs. The development plan will guarantee retention of 100 jobs and the creation of 40 new manufacturing jobs once the plant expansion is complete.

  Total estimated cost of the project is $300,000. The non-federal share of $150,000 will be provided by the City of Jamestown from a $50,000 loan from the Jamestown Local Development Corporation, $50,000 from a loan approved by Chautauqua County Industrial Development Agency, and $50,000 from the sale of the building and equipment.

- $300,000 of Section 214 assistance to aid in the development of an industrial park in the City of Birmingham in Jefferson County, Alabama. The project will call for the development of a new 218 acre publicly owned industrial park near the Research Parkway/I-65 and State Highway 150 Interchange area. Over 510 jobs will be created as a result of the new plant facilities currently being built by Parisians, Inc., and Bruno, Inc. These two firms will invest in excess of $52,500,000 in plant improvements. Within 3 years employment is expected to reach 810+ employees. Birmingham Budweiser Distributing Company, Inc. has also announced plans to locate in the park. The office and warehouse facilities will cost $2,500,000. The project includes the construction of access roads, bridges over railroad tracks, water and sewer, and storm drainage improvements, site preparation, landscaping and street lights. Some of a portion of the park will be open in mid 1986, and the total private sector construction is to be completed by early 1987.

- A $22,000 grant to Virginia for a survey of its 21 Appalachian counties to determine those small businesses that are capable or interested in using research at Virginia Tech or elsewhere, and to survey Virginia Tech's research capabilities to identify research that may have commercial application or other potential use by business and industry. The match of $24,033 will be provided by Virginia Tech.

- A $450,000 grant to the Continental Brick Company with a manufacturing facility in Martinsburg, Berkeley County, West Virginia, to assist in converting two existing gas-fired brick kilns to coal-fired systems. Continental Brick Company will provide $450,000 in matching funds for the $900,000 demonstration. Operation of kilns represents approximately 22 percent of manufacturing costs. Switching to coal as the basic fuel can substantially reduce production costs, keep Continental Brick in a competitive position, and keep the plant in operation and retain the 66 jobs. Successful application has the potential to expand Company operations and add 25 more jobs. The Governor's Office of Economic and Community Development will monitor the demonstration.

- The Commission also funded a $50,000 feasibility study to determine the feasibility of using Appalachian low-volatile metallurgical coal in an innovative direct reduction steel making process. This new process (KR Process) has the potential to reduce substantially the cost of developing new steel producing capacity and improve the cost competitiveness of our nation's steel industry.

  The KR process developed by Karf Engineering uses low-grade coal, without the expenses of conversion to coke, in a quasi-fluidized bed to produce liquid iron while supplying the gas necessary for the reduction of iron oxide. Last year a test run was made using 3,500 tons of minntac iron pellets and 2,600 tons of West Virginia low-volatile coal from the Pocahontas No. 3 seam. It was concluded that the process operability was excellent. The process is capable of producing hot metal with a quality similar to that produced in a furnace. The results of an economic analysis show that the KR process can produce hot metal at a price about $49/ton lower than that of the conventional rate ($195/ton for KR versus $245/ton conventional). This can be done without the air pollution that is plaguing all coke ovens throughout the United States.

- Continued housing assistance for site development in the new construction and rehabilitation of housing for low and moderate income families. In Pikeville, Kentucky ARC provided a grant of $200,000 for site development activities in the new construction of 60 apartments in downtown Pikeville. The only project in Kentucky to receive a HUD Housing Development Grant (HoDAG) of $1,430,002, Hellier Manor will be permanently financed by tax exempt bonds in the amount of $1,847,778. In many of the more rural counties of the Region, ARC funds were matched by CDBG funds and conventional home improvement loans to rehabilitate housing. ARC funds generally paid for site improvements in the revitalization area.

- An ARC grant of $125,000 to Tri-County Technical College in Pendleton, South Carolina will assist in the purchase of automated manufacturing equipment for the existing industrial mechanics technology curriculum and for a planned automated manufacturing technology curriculum. This equipment purchase will benefit an estimated 310 curriculum students and specialized industrial training students in the Tri-County Technical College service counties --Anderson, Oconee, and Pickens. An August 1984 Tri-County Technical College survey of 17 area industries revealed a need for 634 employees trained to repair, install, operate, and maintain automated manufacturing equipment over the next three years --those technical skills Tri-County Technical College intends to provide its students using "hands-on" instruction with the equipment requested in this proposal. Officials from 19 key industries provided the direction and guidance in equipment selection. Scheduled meetings were held during August 1984 with the private sector representatives, and with appropriate Tri-County Technical College staff, along with a staff member of the South Carolina Appalachian Council of Governments. The total project cost is $250,000. The grantee will provide $125,000.

The following table provides the comparable program data by type of project:

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate
Infrastructure:			
Water and Sewer	$ 6,878	$ 6,000	$ 11,000
Waste Treatment	4,904	4,500	5,000
Industrial Development	5,329	12,000	8,000
Community Improvement	2,011	1,000	4,000
Subtotal	19,122	23,500	28,000
Human Resources:			
Vocational Training	1,702	1,000	6,000
Basic Skills	1,686	1,500	3,000
Employee Child Care	951	800	500
Other	308	4,550	1,500
Subtotal	4,647	7,850	11,000
Housing	2,676	900	4,000
Enterprise Development	4,462	3,650	9,000
Other	3,201	800	2,000
TOTALS	$34,108	$36,700	$ 54,000

The Distressed Counties Program ($15.4 million)

Slightly more than one million Appalachians live in the 76 most distressed and underdeveloped counties in the Region. Approximately three-fourths live in 1,800 communities and small settlements consisting of 25 or more homes. The population of these communities ranges from settlements of 50 to 75 persons to small cities of 5,000 to 7,000 population. The remainder of the population lives on scattered homesites and farms.

The most distressed counties lack the resources to provide even the most basic facilities or participate in economic development programs. They frequently lack the funds necessary for matching otherwise available grants and do not have the growth potential needed to qualify for some programs. Poverty and unemployment rates are disproportionately high, and the proportion of houses without adequate plumbing is three times the national average. For the most part, ARC assistance will provide the only hope for these counties to address their basic needs for safe drinking water and waste disposal.

In a finish-up program, the Appalachian States and the Federal government must assume some responsibility to assist these counties, to give them some basis for hope in the future. Accordingly, $15 million is proposed for 1987 to continue a program of special assistance among the 76 most distressed and underdeveloped of the 397 Appalachian counties.

The overall objective of this portion of the finish-up program is to bring safe drinking water and waste disposal services to about half the persons not now adequately served in the 76 counties. Once these basic services are in place, it is expected that opportunities will open up for new housing and other forms of development.

During 1985, $10.6 million were utilized to fund, with other sources, 59 projects for assistance in 52 of the counties (distressed). Examples of projects funded in 1985 include:

- A $400,000 ARC grant was awarded to help the Bath County Water District (Kentucky) to extend and improve its water system. It will benefit 1100 existing customers and add 150 new customers to the system. The proposed improvements are intended to correct health and water distribution problems.

- A $100,000 ARC grant will help the City of Macon (Noxubee County, Mississippi) in making necessary improvements to its sewer system. Approximately 2400 persons will benefit from the improvements.

- A $79,200 ARC grant will assist the Adams County Water Company (Ohio) in extending public service to 65 persons that currently depend on wells and cisterns that are unavailable and contaminated.

- A $137,500 AC grant was awarded to help the West Overton Utility District (Overton County, Tennessee) in extending water to 52 families in the Highland area of the county. Presently, these families are forced to depend on inferior wells, causing many to haul water.

- A $269,054 ARC grant to help the Chanute Pall Mall Utility District (Fentress County, Tennessee) to extend water to an isolated area in Fentress and Pickett Counties where residents are currently experiencing poor water quality due to high mineral content. The proposed project will benefit 300 customers -- mostly residential with nine commercial establishments, several churches and a school.

- A $400,000 ARC grant to help the Town of West Homlin (Lincoln County, West Virginia) in extending water to 131 persons presently relying on wells, springs, cisterns and bottled water. The quality of the ground water is very bad with high concentration soft iron and manganese.

- A $548,000 ARC grant to assit in constructing a community-wide water system that will provide 645 residents with potable water and help reduce their fire insurance rates. The residents are currently depending on wells that have a high concentration of undesirable materials.

For 1987, the proposed $15.4 million distressed counties program will provide for:

- 40 water and sewer projects totalling $8.6 million serving approximately 5,000 familes;

- 10 solid waste disposal projects totalling $2 million serving 1500 families;

- 250 units of safe and warm housing;

- about 5 projects for other basic facilities and services which will be used to address critical community problems; and

- about 15 projects totalling $3.2 million for job creation and retention, manpower and basic skills, and employers child care.

The following table provides comparative data on the program by type of project:

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate
Water and Sewer	$ 7,533	$ 7,700	8,600
Waste Treatment	1,397	1,500	2,000
Other Basic Services	947	500	700
Housing	---	---	500
Job Related*	771	1,800	3,200
Total	$10,648	$11,500	$ 15,400

* Includes projects for job creation, retention; manpower and basic skills; and employer child care projects also eligible under the Jobs and Private Investment program.

The most distressed and underdeveloped Appalachian counties were selected using four indicators:

- o Per capita income, using "market income" so that welfare and other transfer payments would not be considered as measures of economic needs;
- o Unemployment, using a three-year average;
- o Poverty, using the percentage of county populations under the poverty level as defined by national standards; and
- o Infant mortality, (using a three-year average) which is generally used as an indicator of distressed conditions.

The following 76 counties will be eligible for this program in 1987:

Alabama: (6) Bibb, Blount, Coosa, Lawrence, Pickens, Randolph

Georgia: (2) Towns, Union

Kentucky: (24) Bath, Carter, Casey, Clay, Clinton, Estill, Fleming, Jackson, Knott, Lawrence, Lee, Letcher, Lewis, Lincoln, McCreary, Magoffin, Menifee, Morgan, Owsley, Powell, Russell, Wayne, Whitley, Wolfe

Mississippi: (6) Benton, Kemper, Marshall, Noxubee, Tippah, Winston

North Carolina: (4) Ashe, Cherokee, Clay, Swain

Ohio: (2) Adams, Pike

Tennessee: (18) Bledsoe, Campbell, Claiborne, Clay, Cocke, Cumberland, Fentress, Grundy, Hancock, Jackson, Meigs, Monroe, Overton, Pickett, Sequatchie, Scott, Van Buren, White

Virginia: (1) Lee

West Virginia: (13) Braxton, Calhoun, Clay, Doddridge, Lincoln, McDowell, Mingo, Pendleton, Pocahontas, Roane, Summers, Taylor, Webster

Health Finish-up Program

The Health Finish-up Program, started in 1983 and completed in 1985, was established to address three problems in Appalachia which substantially accounted for the long-standing lags in the Region in most measures of health care adequacy:

- Although the Commission helped establish some 400 primary health care sites throughout most of the Region, there were still 65 counties whose basic health care needs had not been adequately addressed by either private sector or public health care efforts;
- Striking progress had been made in the reduction of infant mortality rates in the Region, but 33 counties (including ten counties without basic primary health care) still had rates at least one and one-half times the national average; and
- Appalachia still had the most significant health manpower shortage problems in the United States. Twenty-five percent of all non-metropolitan Health Manpower Shortage Areas (HMSAs) were located in Appalachia. Market forces and public programs had not eased the physician shortage as much in the Region as in the rest of the country.

The Commission role in this program was to provide special developmental aid and technical assistance, not ongoing continuation subsidies for health projects. The Commission role evolved over a number of years and was effective in focusing Federal, State and local resources on the establishment of viable health care activities in Appalachian communities. The finish-up program reflected a specific; targeted approach to completion of past major objectives of the Commission. This ARC focus of public Federal and State and private primary care resources on specifically needy areas was more appropriate than ever in light of budgetary realities of the time. The Appalachian Governors restated the need for this special assistance in their 1981 Report to Congress, after examining State experiences with Federal Medicaid, Rural Health Initiative, and National Health Service Corps programs, and in anticipation of Primary Care block grants.

The Appalachian Regional Commission planned and was able to complete the ARC health program with only three years of ARC assistance. This limitation and others required the effective use of Federal funds and a high degree of cooperation among public and private interest groups. The Commission particularly emphasized the selective use of ARC funds to supplement and extend existing Public Health Service centers and services to address the unmet needs in the Appalachian target areas. If ARC funding had not been made available, little or no progress would have been made in the target counties since other federal funds were not available for new project starts.

The 123 grants approved during the three-year Health Finish-Up Program combined $11.7 million of ARC funds with $15.5 million of other resources to provide:

- basic primary care projects reaching an estimated 195,000 people annually in 41 (63 percent) of the 65 currently eligible counties, with physician recruitment reaching at least an additional 12 (18 percent) of the designated counties;
- prenatal or related care to some 27,000 maternity cases in 24 (75 percent) of the 32 currently designated counties, and in 27 (82 percent) of the originally designated 33 counties, with physician recruitment reaching an additional two of the currently eligible counties;
- construction of 13 primary care sites and major renovation of 9 others; and
- placement of approximately 350 physicians in underserved areas through six state recruitment programs initiated with ARC assistance.

The following table provides data for the three years of the program by type of project:

(thousands of dollars)

	1983 Actual	1984 Actual	1985 Actual	Total
Primary Care Construction	$ 1,814	$ 985	$ 221	$ 3,020
Primary Care Operations (includes preop/startup)	1,778	1,328	1,345	4,451
Physician Recruitment	124	322	72	518
Infant Mortality Reduction	775	1,339	1,618	3,732
Total	$ 4,491	$3,974	$3,256	$11,721

Program Highlights

ARC was given by law a responsibility for improving health care in Appalachia, which had long ranked poorly by all national measures. The Commission initially responded in the late 1960s with an emphasis on construction of critical health facilities. With facilities approaching a level of adequacy in the early 1970s, the Commission initiated a strategy to put in place basic health services within 30 minutes of all the people in Appalachia. An additional health objective was set after the 1978 ARC conference on children and the family: reduce infant mortality, principally through improved primary health care.

Since ARC was initiated in 1965, much progress has been made both in reducing infant mortality and extending health care. The number of counties with severe infant mortality rates was better than halved in the late 1970s. ARC's pioneering primary health care program has reached to some degree over 300 of the Region's 397 counties.

The health finish-up program was begun in 1983 to complete the job of bringing primary health care within a reasonable commuting distance of people throughout the Region, of reducing infant mortality and of recruiting needed health manpower in shortage areas. Counties which had high infant mortality rates and which did not qualify for the primary care program could use ARC funds only for projects specifically designed to reduce infant mortality.

Program funds also were available to continue technical assistance activities for recruiting health providers, especially physicians and nurse practitioners, in severe shortage areas throughout the Region. The continuation of this effort could be made particularly productive during the next several years by graduation of increasing numbers of health personnel who will be required to serve in shortage areas to fulfill their obligations to the National Health Service Corps.

Areas eligible for primary care were counties which had Health Manpower Shortage Areas designated by the Department of Health and Human Services, and which lacked a primary health care program or coverage from another county.

Areas eligible for a special project to reduce infant mortality were those counties which had a three-year average infant mortality rate (1977-79) exceeding 20 infant deaths per thousand live births (approximately one and one-half times the national three-year average of 13.6). There were 33 such counties in the Region, of which ten counties also qualified for primary care projects. Any of the 281 Appalachian counties with officially designated Health Manpower Shortage Areas were eligible for technical assistance for health provider recruitment, whether or not they are eligible for any other kind of program.

This program focused primarily on 87 counties identified as eligible either because (a) they had a severe need for a primary care program or, (b) because they had unusually high infant mortality rates (one and one-half times the national average or worse). Counties which were eligible for at least one of the three years included:

(a) Primary care counties:

Alabama:
Cherokee, Walker, Winston

Georgia:
Banks, Cherokee, Jackson,
Murray, Walker

Kentucky:
Garrard, Greenup, Knox, Laurel,
Lincoln, Montgomery, Owsley,
Rockcastle, Russell, Whitley, Wolfe

Mississippi:
Choctaw, Clay, Lowndes, Prentiss
Tishomingo, Union

New York:
Chenango, Delaware, Schoharie,
Steuben, Tioga

North Carolina:
Yancey

Ohio:
Carroll, Monroe, Pike, Vinton

Pennsylvania:
Bradford, Clinton, Crawford, Erie,
Fulton, Juniata, Mercer, Monroe,
Montour, Northumberland, Sullivan,
Wayne

Tennessee:
Jackson, Polk, Van Buren

Virginia:
Bath, Dickenson, Floyd, Russell

West Virginia:
Calhoun, Clay, Gilmer, Hampshire,
Jefferson, Mineral, Pendleton,
Randolph, Ritchie, Roane, Upshur,
Mingo

(b) Infant mortality counties:

Alabama:
Chambers, Cherokee, Elmore,
Fayette, Winston, Lawrence

Georgia:
Franklin, Towns, Banks, Dawson,
Heard, Murray

Kentucky:
Bell, Lincoln, Martin, Menifee,
Clinton, Lewis, McCreary

Mississippi:
Lowndes, Noxubee, Oktibbeha,
Tippah, Lee, Webster

North Carolina:
Ashe

Ohio:
Harrison, Pike

Pennsylvania:
Montour

Tennessee:
Clay, Monroe, Sequatchie,
Van Buren, Meigs, Fentress

Virginia:
Giles, Highland, Wise,
Russell, Bland, Buchanan

West Virginia:
Clay, Pendleton, Pleasants,
Ritchie, Summers, Webster,
Pocahontas, Ohio, Roane,
Tucker, Upshur

Commission efforts at physician recruitment have focused on cooperation with states and the PHS to place available National Health Service Corps providers in shortage areas of the Region. In FY 1983 funds provided technical assistance resources to six of the states primarily for Corps recruitment activities. The ability of states to assist communities with recruitment appears to have made a significant contribution to increasing Corps placements in the Region, especially under the private practice option. The six states with ARC recruitment contracts reported placements of approximately 350 physicians in Appalachia. ARC staff operation of the Appalachian Health Professions Clearinghouse was reduced, as anticipated, as recruitment activities devolved to the states.

Health Summary

The Commission health program has worked well over the years, and today Appalachians enjoy a much-improved health care system as few would have imagined possible twenty years ago. Region-wide, infant mortality has been reduced from 27.9 deaths per one thousand live births in 1963 to 15.8 in 1976, and to 11.4 in 1982. The ratio of active non-federal physicians per 100,000 population grew from 90.8 in 1967 to 100.6 in 1974, and to 131.2 in 1982; between 1978 and 1982 alone, the number of active physicians increased by nearly 5,000.

The Commission's health program not only provided a means for states and communities to target resources to solve specific problems, improve the quality of life, raise up a healthier and more productive work force and enhance the Region's capacity to attract jobs; it also helped establish a basis for sustained growth in the health care industry in the Region. In keeping with its original mission, the program has demonstrated the impact of health care investments on the economic growth of Appalachia.

The Commission invested nearly $552 million in its health program, including $107 million of funds allocated for community development, between 1966 and 1984. These funds brought to the Region related investments of over $654 million of local funds; over $242 million of other federal resources; and more than $47 million of state funds. The Commission program leveraged in all a $1.5 billion health improvement program in Appalachian communities.

A major legacy of these investments has been jobs: next to retail trade, the health industry has been the fastest growing sector of employment growth in the Appalachian economy, and it added more than one quarter million jobs between the last two census years. In the decade from 1980 to 1990, when a gain of nearly 309,000 health jobs is projected, the health care industry will be by far the greatest source of new jobs for Appalachians.

Administration of Area Development Program

Under the Area Development Program, the Commission will continue to approve individual projects under the terms of the applicable sections of the Act. The individual projects, as in the past, are then administered and monitored by those federal agencies which, under the Appalachian Act, have been given the responsibility for administration of the project details, and the Commission reimburses these agencies for their cost in administering the program. The estimate for FY 1987 is $600 thousand, a reduction of $200 thousand from 1986. The following table summarizes these costs by the program served.

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate
Health and Child Development HHS	$ 512	$ 484	$ 261
Vocational Education Department of Education	84	96	99
Supplemental Grants Agriculture and Others	70	100	100
Mine Area Restoration Completion Office of Surface Mining	38	4	---
Other Agencies and Contingencies		116	140
Total	$ 704	$ 800	$ 600

STANDARD FORM 304
May 1969, Bureau of the Budget
Circular No. A-11, Revised.
304-103

APPALACHIAN HEALTH AND CHILD DEVELOPMENT
Administrative Costs
Department of Health and Human Services

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code		1985 actual	1986 estimate	1987 estimate
	Personnel compensation:			
11.1	Permanent positions	444	405	231
11.3	Positions other than permanent	---	---	---
11.5	Other personnel compensation	2	4	4
	Total personnel compensation	446	409	235
	Personnel benefits:			
12.1	Civilian	47	45	22
21.0	Travel and transportation of persons	18	22	4
22.0	Transportation of things	---	---	---
23.0	Rent, communications, and utilities	---	---	---
24.0	Printing and reproduction	---	---	---
25.0	Other services	---	---	---
26.0	Supplies and materials	1	1	---
31.0	Equipment	---	7	---
99.0	Total obligations	512	484	261
	Personnel Summary:			
	Total No of permanent positions	10	9	8
	Total compensable work-years	9	9	6
	Average GS grade	12.18	12.00	11.25
	Average GS salary	$44,477	$44,942	$42,078

U.S. GOVERNMENT PRINTING OFFICE : [illegible]

APPALACHIAN VOCATIONAL AND EDUCATION FACILITIES
Administrative Costs
Department of Education

STANDARD FORM 304
May 1969, Bureau of the Budget
Circular No. A-11, Revised.
304-103

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1985 actual	1986 estimate	1987 estimate
Personnel compensation:			
11.1 Permanent positions	72	74	76
Personnel benefits:			
12.1 Civilian	9	7	9
21.0 Travel and transportation of persons	3	5	4
23.0 Rent, communications, and utilities			
23.1 Standard level user charges	---	10	10
26.0 Supplies and materials	---	---	---
99.0 Total obligations	84	96	99
Personnel Summary:			
Total No. of permanent positions	2	2	2
Total compensable work-years	2	2	2
Average GS grade	9.0	9.0	9.0
Average GS salary	$36,383	$36,812	$36,140

COMMUNITY DEVELOPMENT PROGRAM
Farmers Home Administration

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1985 actual	1986 estimate	1987 estimate
Personnel compensation:			
11.1 Permanent positions	54	84	84
Personnel benefits:			
12.1 Civilian	7	10	10
21.0 Travel and transportation of persons	9	6	6
25.0 Other services	---	---	---
99.0 Total obligations	70	100	100
Personnel Summary:			
Total compensable work-years	2	3	3

STANDARD FORM 304
May 1969. Bureau of the Budget
Circular No. A-11, Revised.
304-105

APPALACHIAN ENVIRONMENT AND NATURAL RESOURCES
Administrative Costs
U.S. Office of Surface Mining

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code		1985 actual	1986 estimate	1987 estimate
	Personnel compensation:			
11.1	Permanent positions	34	3	---
11.3	Positions other than permanent	---	---	---
11.5	Other personnel compensation	---	---	---
	Total personnel compensation	34	3	---
	Personnel benefits:			
12.1	Civilian	4	1	---
21.0	Travel and transportation of persons	---		---
22.0	Transportation of things	---	---	---
23.0	Rent, communications, and utilities	---	---	---
24.0	Printing and reproduction	---	---	---
25.0	Other services	---	---	---
26.0	Supplies and materials			
99.0	Total obligations	38	4	---
	Personnel Summary:			
	Total No. of permanent positions	0	0	---
	Total compensable work-years	1.16	.14	---
	Average GS grade	10.3	10.3	---
	Average GS salary	$32,496	$31,773	---

LOCAL DEVELOPMENT DISTRICT AND TECHNICAL ASSISTANCE PROGRAM

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
Appropriation	$ 5,000	$ 3,500	$ 5,000	$ +1,500
Obligations, Net	$ 4,691	$ 4,595	$ 5,000	$ +405

Program for 1987

An appropriation for $5 million is requested for this activity to finance the Federal contribution toward the administrative expenses of local development districts and to support a Commission technical assistance program.

The funds requested would provide $1 million for the Commission technical assistance program and $4 million for the support of multicounty development districts, an increase of $1.5 million over the amount appropriated in 1986. Comparable requirements for the program based on funds available for obligation follow.

	1985 Actual	1986 Enacted	1987 Request	Change from 1986
Local Development Districts	$ 4,037	$ 3,000	$ 4,000	+1,000
Commission Technical Assistance	1,052	1,595	1,000	-595
Total Obligations	$ 5,089	$ 4,595	$ 5,000	$ +405
Less Prior Year Recovery	-398	---	---	---
Net Obligations	$ 4,691	$ 4,595	$ 5,000	$ +405
Unobligated Balances Brought Forward:	(-785)	(-1,095)	---	(+1,095)
Approved Projects not Obligated	-528	-155	---	+155
Other Unobligated Balance	-257	-940	---	+940
Unobligated Balances Carried Forward:	(1,095)	---	---	---
Approved Projects Not Obligated	+155	---	---	---
Other Unobligated Balances	+940	---	---	---
Total Appropriation	$ 5,000	$ 3,500	$ 5,000	$ +1,500

Specifics for these major subprograms follow:

Local Development District Program. . . . . $4 million

The Commission requests $4.0 million, the same amount requested in 1986, for funding of programs to support the day-to-day expenses of its 69 multicounty development districts. By 1985, the Commission had reduced its financial support to local development districts by 20 percent since 1981 and a further reduction of 25 percent in 1986 is required. It is necessary to provide a sound financial base for assisting districts to obtain alternate sources of funds or for an orderly termination of programs, depending on local needs and financial abilities. In addition, the Commission will continue a special technical assistance effort that helps the districts during the finish-up period. Increasing responsibilities have been placed upon local development districts over the last several years by the States, and by the Appalachian regional program. Additional responsibilities are arising in connection with

Federal block grant programs and additional proposals for transferring Federal programs to States and localities. Districts are also increasingly being relied upon by local governments to assist in reducing the costs of providing local services.

Appalachian development planning by the States has increasingly drawn upon district resources and plans. Further dependence has been placed on them in connection with further development of the State ARC finish-up plans and in assisting states and localities to assume new responsibilities under current Federal block grant programs. The districts are called upon by the Commission, by the States, and by their local constituencies for technical assistance in public finance, management, planning and for general program activities. They are expected to be involved in the planning, development, coordination, monitoring and evaluation of areawide programs and projects. The Commission will continue to work with States and districts to strengthen the formation of areawide development programs for the districts in order to bring together as many priority projects and funding sources as possible. This effort increases the impact of Appalachian funds for key investments that are tied to retaining and expanding employment in the private sector. The districts assist in relating ARC programs, categorical grant programs and block grants to one another in accomplishing state and local objectives which will be particularly important during the ARC finish-up program. This also strengthens state-local linkages and ensures strong local input in the development of State planning and increases private sector involvement in the economic development of Appalachia.

The districts have readily accepted these responsibilities. From 1965 until the 1975, official recognition of districts was limited to general provisions in the statute authorizing financial support and providing for certification of districts. The 1975 amendments provided clear statements of the district's role and responsibilities and called for encouraging the development of areawide action programs. This provided a strong basis for negotiating with Federal agencies to encourage common designations or require establishment of formal relationships among areawide agencies. The average district serves as the local coordinating agency for six different Federal programs.

Primarily, the local development districts during the Appalachian finish-up program have responsibility to:

-- Prepare district development programs setting forth areawide development strategies and priority projects and programs proposed for funding by local, State and Federal agencies.

-- Provide Federal and State grant application information and assistance with procedures.

-- Serve as a means of communicating local and areawide policies and priorities for Appalachian development to the States.

-- Serve as the focal point for private and public sector teamwork to finance new investments and the jobs associated with them.

-- Facilitate joint projects or combined service delivery systems to provide services as efficiently and economically as possible.

-- Provide public finance, administrative and planning services assistance as requested by small communities and rural areas that cannot afford to support these services themselves.

-- Provide technical assistance in major program areas including private sector investments, housing, water and wastewater management, and industry-related child care.

To conduct these basic activities, $4.0 million is requested. The following table shows actual amounts by States for 1985, and planned allocations for 1986 and 1987.

STATE BY STATE SUMMARY OF ESTIMATED DISTRICT FUNDING

(thousands of dollars)

Basic Support Program Amounts	No. of LDDs	1985 Actual	1986 Estimate	1987 Estimate
Alabama	7	$ 383	$ 290	$ 387
Georgia	6	319	239	319
Kentucky	9	543	395	526
Maryland	1	81	55	74
Mississippi	4	251	146	195
New York	3	167	124	165
North Carolina	6	375	278	371
Ohio	3	189	127	170
Pennsylvania	7	437	378	504
South Carolina	1	121	91	121
Tennessee	5	339	253	336
Virginia	6	316	237	316
West Virginia	11	516	387	516
Totals	69	4,037	3,000	4,000

Commission Technical Assistance .... $1 million

An amount of $1 million is requested for this program in 1987, the same annual amount appropriated since 1982. Commission technical assistance, research and evaluation programs have been those cutting across program lines and requiring broad interprogram, subregional or regional management capabilties.

During the Fiscal Year 1987, Commission technical assistance will continue to be used to assist in carrying out the policies and objectives of the Commission's finish-up program as presented in the report submitted to Congress on December 31, 1981. Major emphasis will be placed on assistance to our states to understand and better plan for institutional, structural and technological changes occuring in our regional economy, on helping emerging small businesses, small coal producers market and export coal including creation of export trading companies, and on strengthening public and private capability to develop, manage and carry out priority activities under the Commission's finish-up program.

The 1985 program included the following major projects:

Dropout Conference and Study. In 1985, the Commission adopted a resolution identifying school dropouts as a major regional concern and launching a major initiative to combat the problem. One of the first actions undertaken was a comprehensive study of the scope of the dropout problem in the Region. The study was designed to provide: regional, subregional and county estimates of the number and percent of school dropouts; an inventory of programs underway in the Region to prevent school dropouts; and consideration of issues affecting replication of dropout reduction programs. A major study finding was that, overall, the dropout rate for Appalachia is 5.8 percent higher than for the rest of the nation, and that the central Appalachian region and the southern Appalachian region are 59 percent and 25 percent above the U.S. average, respectively.

In June, the Commission sponsored a two-day "Regional Workshop on School Dropouts" in Atlanta, co-hosted by ARC States' Co-Chairman Governor Joe Frank Harris. More than two hundred educators and community leaders from throughout Appalachia attended the conference, to review results of the study and to hear firsthand accounts of successful dropout prevention programs now being conducted in the Appalachian states.

Infant Mortality Reduction. ARC has been winding down its traditional health program, which emphasized supporting the creation of health care facilities. Additionally, the Commission has been concentrating on a volunteer program to reduce infant mortality. The Infant Mortality Reduction (IMR) Volunteer Program has been tested in five sites. The program has been welcomed in each site as an effective supplement to existing efforts. The IMR program is a low-cost, high-yield response to a serious problem.

- Increase the number of potential SBIR awardees by identifying innovative small firms involved in basic research and technological advancement.
- Provide on-going information on federal procurement policies and opportunities to small businesses.
- Work with existing entities, public and private, to establish, nurture and promote homegrown small innovative business.
- Increase the level of awareness among state economic development officials of special needs and unique problems of small firms.
- Provide assistance in proposal writing, developing financial plans, export promotion and organizing export trading companies.
- Assist in identifying special expertise, both institutional and individual, that will link professional schools and basic scientists to small high technology companies.

Wood Products Export Study and Conference. The Commission sponsored a two-day conference in Tupelo, Mississippi, in October, 1984 to present findings of a major study on the wood products industry in the southern Appalachian states, and to explore opportunities for increased export wood products via the Tennessee-Tombigbee Waterway. The study drew on the expertise of major wood users, producers, buyers, foresters, barge operators, bankers and credit expediters, brokers and saw mill operators.

The main study report is titled "Overview of the Prospects for the Exports Trade in Primary Wood Products from Southern Appalachia." volumes I and II of the study are a summary and synopsis of all seven separate product reports, as well as discussion of a multidude of issues. Volume III is a separate study of domestic wood and wood product transportation and its impact on wood exports. Each of the other reports is divided into separate discussions of wood supply for that particular wood product, which include: world trade in that product; export trade in the product; export markets and prices; transportation cost analysis; avenues of entry into export trade markets; and a business plan to consider export trade participation.

Tennessee-Tombigbee Waterway. Technical assistance is being provided member states and the Tennessee-Tombigbee Waterway Authority to assist in encouraging the movement of trade on the waterway. The ARC effort focuses especially on the possible use of export trading companies to support increased exports of coal, timber, grain and other products. The ARC would attempt to serve as a catalyst in bringing together various interests and providing technical support to those interested in the development of an export trading company through which different firms, port authorities and the like can cooperate to expand export marketing and financing, the sharing of foreign markets and transportation of export goods.

Water and Wastewater Management Technical Assistance (for distressed counties). Many small communities and rural residences in Appalachia lack a safe and dependable water supply or an adequate wastewater treatment system. One of the problems at the local level in being able to undertake such projects is the need for expertise regarding the options and alternatives available to provide and manage water supply and wastewater systems. The technical assistance program would identify and assess needs, problems and opportunities among the 67 distressed counties and assist in developing management and financing arrangements to assure continued efficient operations of the systems. This would be accomplished through the use of a team of professional advisers, with expertise in the various facets of implementation, who would be made available to the states and local communities.

Kentucky Coal Summit. The Commission prepared a series of reports on the coal industry for a Coal Summit Conference sponsored by the State of Kentucky's Energy Cabinet in Lexington, Kentucky, in April. The conference brought together coal company, transportation and utilities executives to discuss the future of the industry.

The background papers furnished to the conference by ARC were: "Fuel Choice and Competition;" "Coal Export Market;" "Environmental Issues Affecting Coal Usage;" and "Transport Issues Relating to Coal," as well as a report on "Outlook for Coal and Energy," which provided a forecast of coal activity for the next ten years. The forecast projected growth in coal production from 887 million tons in 1985 to 1,159 million tons by 1995, much of which is tied to growth in electric utility consumption of coal.

Additional Program Initiatives.

- Technical assistance to troubled water and wastewater plants in distressed counties to increase efficiency and lower costs through improved operational management.
- Continued assistance to states and local agencies in the development of local export initiatives including coal trading companies and small business assistance centers.
- Develop with Appalachian states school drop-out prevention programs through technical assistance and research.
- Continued improvement of our capability to provide regional and local economic information to state, LDD and local planning officials.

Regional Update. The Commission prepared an update of its FY 1983 assessment of the Appalachian economy. The report outlines how specific regions and industries within Appalachia performed during the 1980-1985 time period. The report provides a county-by-county analysis using both social and economic indicators. The regional county analysis is compared with a sample of U.S. counties. The insight provided by this report should be useful at the local, state and national levels in structuring future development actions.

SALARIES AND EXPENSES

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
Appropriations	$ 2,300	$ 2,200	$ 2,200	$ -0-
Obligation	2,299	2,200	2,200	-0-

The Salaries and Expenses appropriation provides for the full cost of the Federal Co-Chairman and immediate staff and the contribution by the Federal Government of 50 percent of the administrative expenses of the Appalachian Regional Commission. The budget request for 1987 is for $2,200 thousand, the same amount as appropriated in 1986:

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
1. Federal Co-Chairman	$ 449	$ 450	$ 450	$ ---
2. Commission administrative expenses (50% Federal contribution)	1,850	1,750	1,750	---
Total	$ 2,299	$ 2,200	$ 2,200	$ ---

1. Federal Co-Chairman and Staff

The request of $450 thousand for the Federal Co-Chairman and staff provides for a Federal staff of seven persons with their related travel, personnel benefits, and other costs. The Federal Co-Chairman's staff is paid entirely by the Federal Government and assists in carrying out the Federal Co-Chairman's responsibilities including handling relationships with other Federal agencies and with the Congress, and the financial management of the Appalachian Regional Development Program as delegated by the President. The amount requested is the same as appropriated for FY 1986.

2. Appalachian Regional Commission Administrative Expenses

While the expenses of the Federal Co-Chairman's immediate staff are paid solely by the Federal Government, the thirteen States of the Appalachian Region have responsibility for providing one-half of the administrative expenses budget of the Appalachian Regional Commission. The States share is provided through contributions from each of the thirteen Appalachian States. The States agreed, beginning in FY 1980, that all costs of operating the non-Federal Commission staff should be shared equally by the States and the Federal Government. Thus, those costs previously borne solely by the Federal Government for processing health and child development projects, administering the LDD and research program and providing an in-house energy research capability are now shared equally by the Federal government and the thirteen States. The table below reflects the status of all administrative costs of the Commission staff.

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
State Contribution	$ 1,850	$ 1,750	$ 1,750	$ ---
Federal Contribution	1,850	1,750	1,750	---
Prior year balances used	505	1,065	880	-185
Total Costs	$ 4,205	$ 4,565	$ 4,380	$ -185

The requested Federal contribution, when matched by state contributions and the use of prior year balances, will provide a budget for 1987 totalling $4,380 thousand, a decrease of $185 thousand from 1986. The decreased amount results primarily from planned staff space and related reductions.

(thousands of dollars)

	1985 Actual	1986 Enacted	1987 Estimate	Change from 1986
Personnel Compensation	$ 2,559	$ 2,665	$ 2,615	$ -50
Personnel Benefits	375	390	380	-10
Travel	91	110	110	---
Rents to Others	532	475	450	-25
Communications, Utilities, etc.	248	470	355	-115
Printing	96	120	120	---
Other Services	251	285	300	+15
Supplies	43	45	45	---
Equipment	10	5	5	---
Total	$ 4,205	$ 4,565	$ 4,380	$ -185

Commission Staff

The Commission staff budget proposes a non-Federal staff in 1987 of 58 fulltime positions, with grades and levels of compensation paralleling the Federal Civil Service System. The 58 positions represent a reduction of 4 positions from 1986 and a total reduction of 50 percent or 57 positions from the 1981 staff level of 115 positions. The staff is headed by the Executive Director appointed by the Commission. The Commission is organized along major functional areas as follows:

Office of the Executive Director

The Executive Director is the chief administrative officer of the Commission staff. He has responsibility for carrying out the administrative functions of the Commission, for direction of the Commission staff and for assisting the Commission and the States in carrying out the Appalachian Regional Development Programs. This office is responsible for the overall direction of Commission staff in the execution of Commission policy including program development and the review of State plans and project applications from the States. Further, the Executive Director serves as principal Commission staff advisor to the States and Federal Co-Chairman on matters relating to Commission programs.

Program Operations

This unit is primarily comprised of four divisions organized by program activities to handle the Commission's responsibilities for implementing the Appalachian regional development programs at the Federal, State and local level. These divisions are Community Development, Human Resources, Coordination, and Energy, Transportation and Economic Analysis. Activities within these divisions include education, training and manpower recruitment, community development for distressed counties and the jobs and private investment programs, natural resources, environment, energy, and transportation. This unit is also responsible for supervising the Commission's technical assistance and local development district programs as well as the regional research and analysis required under the statute. The Program Operations unit is responsible for the review, analysis and processing of all project proposals submitted by the states for funding, for the provision of technical services to the states and the local development districts, and for program monitoring and evaluation. A small program coordination group provides for overall program coordination and communication among the several functional divisions.

The professional and support personnel assigned here make this the largest operating unit within the Commission. Its major responsibility is to provide expeditious handling of project funding requests, including the provision of technical assistance to state and local applicants.

Program Support

Supporting services for the planning and operating elements are provided by three units: Office of the General Counsel, the Communications Division, and the Office of Finance and Administration.

The Office of the General Counsel provides legal review of projects and proposals and prepares all contracts. Upon request, the office also counsels the Federal Co-Chairman and individual state members on legal matters pertaining to their activities.

The Communications division is responsible for the preparation and dissemination of official Commission materials, production of the Commission's annual report, technical journal and newsletter, review and editing of Commission studies and reports, and maintaining records of Commission proceedings.

The Office of Finance and Administration performs all personnel, financial, accounting, and auditing functions for the Commission's program and administrative operations. This unit further provides for the development of management and operating data relating to Commission programs and maintains central data files for the Commission. Procurement, supply, clerical, library, archives, and other support services are also the responsibility of this division.

The following table reflects the reductions made in positions since 1981 by organizational unit:

	FY 1981	FY 1986	FY 1987
Executive Director	4	4	4
Program Operations	49	27	26
Coordination, Planning & Evaluation	21	4	3
General Counsel	6	5	5
Communications	11	5	4
Finance and Adminstration	24	17	16
Total Positions	115	62	58

Relationship of Administrative to Program Costs

The Appalachian Regional Development Program is unique in that under our program are conducted a number of diverse programs involving several Federal agencies and bureaus. In conducting these programs, the agencies perform varying administrative functions for which they are reimbursed from the program appropriation.

The costs range from minimal amounts in the supplemental grant type program where for the most part the various agencies perform no new function and process and disburse the ARC grant as an adjunct to their basic grant, to the significant costs in programs where Commission-financed projects constituted the bulk of work done. The following table shows by program the related Federal administrative costs. The current Federal administrative and other staff costs in 1986 of $4,191 thousand are equal to 2.63 percent of the total program costs. The thirteen State members will also contribute $1,750 thousand toward the Commission's expenses in 1986. Even with these costs, the percentage of administrative cost of total Federal appropriations is only 3.73 percent.

(thousands of dollars)

Activity	Federal Program Costs	Administration Costs	Total Obligation
1. Appalachian Regional Development Program:			
A. Highways	$102,792	$ 1,191	$ 103,983
B. Area Development Program	47,727	800	48,527
C. LDD and Technical Assistance	4,595	---	4,595
Subtotal	$155,114	$ 1,991	$ 157,105
2. Salaries and Expenses	---	2,200	2,200
TOTAL FEDERAL COSTS	$155,114	$ 4,191	$ 159,305
Percent of Cost	97.37	2.63	100.00

APPALACHIAN REGIONAL COMMISSION
Salaries and Expenses

STANDARD FORM 304
May 1969, Bureau of the Budget
Circular No. A-11, Revised.
304-103

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code		1985 actual	1986 estimate	1987 estimate
	Personnel compensation:			
11.1	Permanent positions	359	360	360
11.3	Positions other than permanent	—	—	—
11.5	Other personnel compensation	—	—	—
	Total personnel compensation	359	360	360
	Personnel benefits:			
12.1	Civilian	34	35	35
21.0	Travel and transportation of persons	41	40	40
22.0	Transportation of things	—	—	—
23.0	Rent, communications, and utilities	—	—	—
25.0	Other services	10	10	10
26.0	Supplies and materials	5	5	5
41.0	Grants, subsidies, and contributions	1,850	1,750	1,750
99.0	Total obligations	2,299	2,200	2,200
	Personnel Summary:			
	Total No. of permanent position	7	7	7
	Total compensable work-years	7	7	7
	Average salary of upgraded positions	$51,690	$52,204	$52,204

U.S. GOVERNMENT PRINTING OFFICE : 1969 O—[illegible]

TUESDAY, MARCH 4, 1986.

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

WITNESSES

DONALD PAUL HODEL, SECRETARY OF THE INTERIOR

ROBERT BROADBENT, ASSISTANT SECRETARY, WATER AND SCIENCE

C. DALE DUVALL, COMMISSIONER, BUREAU OF RECLAMATION

WILLIAM C. KLOSTERMEYER, ASSISTANT COMMISSIONER, ADMINISTRATION, BUREAU OF RECLAMATION

Mr. BEVILL. The Committee will come to order.

Mr. Secretary, we are always pleased to have you with us, and we look forward to hearing your testimony and you may proceed as you wish.

Mr. HODEL. Mr. Chairman, thank you.

I have with me today Bob Broadbent, who is the Department's Assistant Secretary for Water and Science and Dale Duvall, who, I think, is making his first appearance before this committee. He's the new Commissioner of the Bureau of Reclamation. And Mr. Bill Klostermeyer, who is the Administrative Officer for the Bureau.

I have a prepared statement which I would like to submit for the record, if I may.

Mr. BEVILL. The statement will be included in the record.

[Statement of Mr. Hodel follows:]

Statement of Donald Paul Hodel, Secretary of the Interior Before the House Subcommittee on Appropriations for Energy and Water Development
March 4, 1986

Mr. Chairman and Members of the Committee:

I am pleased to appear before you today in support of the President's FY 1987 Budget for the Department of the Interior.

The FY 1987 budget for the Department is equally sensitive to the President's efforts to reduce the Federal deficit and to managing our public resources and other Interior Department activities. The balancing of needs against available resources dominates any budget discussion. Within available budgetary resources, we have chosen generally to emphasize operation and maintenance of public lands and facilities rather than new investments in construction and land acquisitions. However, we are requesting an increase in budget authority for the Bureau of Reclamation to maintain construction schedules established in 1986. It should be noted, though, that even with this increase in budget authority, construction outlays by the Bureau will fall by $65 million in 1987, thereby contributing to the President's deficit reduction plan.

Department Totals

Before I discuss the elements of our request for the Bureau, I would like to provide you with some specifics on the budget request for the entire Department. The 1987 budget for the Department totals $6.2 billion in budget authority, a decrease of $184.3 million from the current 1986 estimate. Outlays in 1987 are estimated to be $6.6 billion, a $295 million reduction below the 1986 estimate of $6.9 billion.

While providing sufficient funding to meet the Department's many and varied responsibilities, this budget contributes to reduction of the deficit. The Department's requested budget of $6.2 billion is at a level that, taken together with the other components of the President's budget, will achieve the FY 1987 deficit target established by the Gramm-Rudman-Hollings Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

Effects of Gramm-Rudman-Hollings

As you know, Gramm-Rudman-Hollings will result in changes in 1986 budget and spending authority and outlays. For the Department in total, $256.6 million in budget authority and spending authority is sequestered, of which $218.1 million is permanently cancelled. Reimbursable spending authority of $10.7 million and loan authority of $5.5 million will also be sequestered under P.L. 99-177. These sequestrations will reduce 1986 outlays for the Department by $202 million.

The total 1986 impact of P.L. 99-177 on the Bureau of Reclamation is the permanent cancellation of $34.3 million in budget authority, an additional decrease of $6.1 million in spending and obligational authority, and a loan limitation decrease of $2.1 million. The effect on outlays for the Bureau is a 1986 decrease of $30.3 million.

Bureau of Reclamation

The 1987 budget estimate of $934.4 million represents an increase of $118.5 million over the 1986 appropriation of $815.9 million. The 1987 estimate is an increase of $152.9 million over the 1986 estimate, which reflects P.L. 99-177 sequestrations. The 1987 estimate for accounts subject to appropriation is $853.1 million, an increase of $108.6 million over the 1986 estimate of $744.5 million.

Construction Program

The budget request of $576.8 million for the Construction Program, a $77.5 million increase in budget authority over the 1986 budget estimate of $499.3 million, provides for continued construction on 61 projects. Work on one drainage and minor construction project and up to six safety of dams initiatives will begin.

While no construction new starts are proposed for 1987, $42 million is provided for the four initiatives first funded in 1985, including $15 million in non-Federal cost sharing. Major increases in funding include $13 million for Buffalo Bill Dam modification, $26 million for the Central Utah Project, $11 million for dam safety projects and $17 million for the Central Arizona Project.

The increase in the Construction Program may seem to be a departure from the overall Departmental budget policy of deemphasizing construction and emphasizing operations and maintenance of existing facilities. However, the budget projects construction obligations to decrease from $711 million in 1985 to $600 million in 1986 and $577 million in 1987. Therefore, while maintaining construction schedules established in 1986, we are still projecting a 4% reduction in obligations and a 9% reduction in outlays.

The budget reflects the progress which the Bureau has made in the past year in seeking and strengthening partnership arrangements with States and other non-Federal interests concerned with water development in the West. Not only does our 1987 program reflect $15 million in non-Federal cost sharing on the four construction projects initiated under the 1985 supplemental appropriations bill, but it also includes $27.3 million in non-Federal financing for the uprating of generators at Hoover Dam. The CAP Plan 6 cost sharing proposal is currently under review within the Department. Our 1987 and outyear budget estimates are sufficient to meet the construction schedules proposed in the agreement.

Loan Program

The request for the Loan Program in 1987 is $39.9 million, a $2.3 million increase over the 1986 estimate of $37.6 million. The request includes $38 million to continue work on 15 projects. The remaining $1.9 million is for three new loans that will be subject to a legislative proposal that will raise the authorization ceiling from $600 million to $1.2 billion and, consistent with the Administration's proposed credit management reform policy, will require that all loan costs be repaid at current Treasury borrowing costs plus one-eighth of one percent for administrative expenses.

Planning

The 1987 request for General Investigations is $27.8 million, a $4.8 million decrease below the 1986 estimate of $32.6 million. The major emphasis in the planning program is on projects that would increase municipal and industrial water supplies, enhance water quality, and assist in meeting irrigation and energy needs. The reduction of $4 million in the plan formulation and advance planning programs reflects completion of 17 studies and termination of 9 studies. The reduction reflects an effort to set funding for the Bureau's planning program at a level which bears a reasonable relationship to expected future funding levels for new starts, and to target planning efforts on those projects which are likely to generate significant construction cost sharing and which have the best prospects for being built.

Operation and Maintenance

The 1987 budget request for Operation and Maintenance is $150 million, a $23 million increase over the 1986 estimate, for activities on 34 projects and the Bureau's associated O&M program. Increases are proposed for most projects to permit funding of a reliable operation and preventative maintenance program. Major increases are proposed for Yuma area projects (+$11 million) where new facilities at the Yuma Desalting Plant are coming on line, and for the Central Valley Project (+$10 million) where payments to the State of California will be made for past water delivery charges.

Other

In 1987, the budget request includes $51.2 million, an increase of $4.1 million over 1986, for General Administrative Expenses. The request for the Emergency Fund is $1 million, the same amount appropriated in 1986. The budget projects that non-Federal contributions to Reclamation Trust Funds will increase by $11.3 million to $28.1 million, reflecting increased cost sharing for construction new starts first funded in 1985. In addition, the Bureau carries out many cooperative activities through reimbursements, such as the Foreign Activities Program, which now provides assistance in 12 countries.

Irrigation Drainage Activities

The overall budget request for the Bureau includes $11.5 million to continue the joint Federal-State study of the environmental and economic impacts of and potential solutions to irrigation drainage problems in the San Joaquin Valley and to complete preparation of the clean-up plan for Kesterson Reservoir. No funds are requested at this time for actual clean-up pending submission of the clean-up plan to the State of California in December 1986. The $11.5 million request will fund activities of the Fish and Wildlife Service, Geological Survey and Bureau of Reclamation.

In 1985, I established a Departmental Task Group on Irrigation Drainage to evaluate irrigation drainage effects at Interior facilities in other parts of the West. In January 1986, the task group identified 19 areas involving Department of the Interior responsibilities throughout the West which require further study to determine if corrective action is needed to address confirmed or potential irrigation water quality problems. Field teams are now preparing plans of study. Additional resources involving several bureaus and, potentially, non-Federal sources may be needed in 1986 to initiate field work at highest priority sites and in 1987 to conduct other priority work. The Department intends that funding for this work occur within existing budget levels.

Conclusion

In conclusion, Mr. Chairman, I believe this is a good budget which should be approved by the Congress. This budget fairly meets our responsibilities to support water development in the West in cooperation with State and local interests and it highlights the need to maintain facilities already in place. It helps put the overall Federal budget on a course of steadily declining deficits leading to a balanced budget.

I will be happy to answer any questions that you have at this time.

Mr. **Hodel**. If I may summarize that very briefly, Mr. Chairman. First of all, I need to thank this Committee for its on-going and solid support for the budget requests of the department which come before you. We appreciate that.

This is a very difficult budget time for us, and in the preparation of this budget we have attempted to put our focus on the operational responsibilities of the department.

If you look through the entire budget of the department you will see that we have maintained or increased the budget levels for operations of the Department. That's true also within the Bureau of Reclamation budget. We have tried to pare other parts of our budget down in order to make that possible under the budget constraints. We think it's a responsible way to proceed.

One item I need to comment on is the Bureau of Reclamation's Construction program for which we are requesting an increase of $77.5 million in budget authority for 61 on-going projects. It's important, I think, to note that outlays, however, in fiscal year 1987 would, in fact, be down $65 million. I make that point because we've got these budget authority, budget outlay, and obligations questions. Obligations have been falling as we try to cope with our budgetary responsibility, but we do find that we are asking for an increase in budget authority. I wanted to explain that right off the bat.

The other item that I think should be mentioned has to do with the continuing support on our part for the Loan Program in 1987. There's $39.9 million requested, of which $1.9 million is for three new loans, which are contingent upon passage of authorizing legislation which would increase the current program authorization level from $600 million to $1.2 billion. That proposed legislation would provide that these loans would be made at interest rates which would be tied to the Treasury rate, plus ⅛ of one percent. That's a proposal, therefore, which would increase the availability of loans. But we're proposing to do it through a program which would charge interest on the repayment of all activities. This is something that would be dependent upon the outcome of a substantive hearing and legislation.

Those are the items, Mr. Chairman, I thought I should especially draw to your attention. I'm sure you and the members of the Committee will have many other items you'd wish to explore.

Mr. **Bevill**. Mr. Duvall, do you want to proceed with your statement.

Mr. **Duvall**. Yes, if I could, Mr. Chairman.

First, I'd like to thank you for the opportunity to appear before you and your entire committee to discuss the fiscal year budget for the Bureau of Reclamation.

The President's fiscal year 1987 budget requests $853 million for the Bureau of Reclamation, and represents—what is in our mind—the amounts needed to maintain the traditionally sound water resource development program in the West.

As the Secretary has indicated, there is an appearance of an increase in the budget authority of $109 million for the Bureau. That, perhaps, warrants some further explanation.

For instance, why are we requesting an increase for the Bureau of Reclamation when funding for other Interior programs is decreasing?

Let me say, first, that relative to FY 1986 the Bureau of Reclamation's proposed budget actually decreases in 1987 when properly measured in terms of total funds available and expenditures. This seeming confusing anomaly results because the FY 1986 Construction Program, totalling $600 million, is financed not only by $499 million in budget authority, but also reflects a $101 million carry-over of unobligated funds from the previous years.

The Administration consciously reduced the fiscal year 1986 budget authority in order to capitalize on the unused and accumulated carry-over authority from previous years.

In 1987, on the other hand, we will finance the Construction Program entirely from our requested budget authority of $577 million. In other words, we presently expect and plan to use up all of the carry-over funds in fiscal year 1986. Therefore, in terms of total funds available, our 1987 Construction Program is $23 million below that of 1986.

For the Bureau, as a whole, total requested funding in 1987 is $27 million below the 1986 level. Similarly, proposed construction expenditures, or outlays, are falling by $65 million, or almost 10 percent below the 1986 construction expenditures. Total proposed fiscal year 1987 Bureau expenditures fall by $63 million.

In sum, the Bureau of Reclamation's budget for fiscal year 1987 is lean but efficient, in that it maintains 1986 construction schedules.

Equally important, however, is the fact that through reduced obligations and expenditures it supports, and equitably contributes to, the President's plan to eliminate the Federal deficit by fiscal year 1991.

The fiscal year 1987 Operation and Maintenance Program of $150 million is aimed at preserving the operation and structural integrity of aging facilities. It will also help increase the productivity of existing projects and minimize the Federal cost of operation, maintenance, and replacement of facilities over the long run.

Under the Loan Program we are requesting a total of almost $40 million. Funds of $1.9 million are included for three new loans contingent upon enactment of legislation to increase the appropriation ceiling. These new loans will provide for reimbursement for all project purposes at current Treasury borrowing rates, plus 1/8 of one percent.

The request for the General Investigations Program is $28 million, which will include funds for 27 ongoing projects and for four ongoing advance planning projects. Funding of about $1 million will be available for four new investigations and three new advance planning studies.

As we look through our planning process, we will be largely guided by the President's own stated policy for this Administration's water project financing and related cost sharing. Following that policy, we will, within existing and current law, negotiate reasonable financing and cost-sharing with non-Federal interests on a project-by-project basis. We will honor prior commitments to States. We will follow consistent cost-sharing rules for each project tempered by equity considerations for individual project circumstances. We will seek to insure that the project beneficiaries, and not necessarily government entities, ultimately bear a substantial and appropriate part of total project costs. We will seek non-Federal cost-sharing beyond the 15 percent requirement for safety of dams work for additional benefits which will occur from the proposed project. We will seek cost sharing for project planning wherever appropriately possible. We will communicate and seek counsel with the OMB and with the Congress on negotiated agreements.

Finally, I want to emphasize the importance of maintaining our efforts with respect to completing our on-going projects in a timely manner.

Most of our projects are well under way. Many are 50 percent complete or better. Current project data suggests that every dollar we spend to complete existing projects will yield between $2.50 and $5 in economic benefits. Delaying completion of construction, therefore, could carry a heavy cost both to the public and to the Treasury.

I thank you, Mr. Chairman.

I have a complete statement that I will submit for the record.

[Statement of Mr. Duvall follows:]

OPENING REMARKS BY
C.DALE DUVALL
COMMISSIONER, BUREAU OF RECLAMATION
BEFORE THE
HOUSE APPROPRIATIONS SUBCOMMITTEE ON
ENERGY AND WATER DEVELOPMENT
March 4, 1986

Thank you, Mr. Chairman, for the opportunity to appear before you and the committee today to discuss the proposed fiscal year 1987 budget for the Bureau of Reclamation.

This is my first appearance before you as Commissioner and I consider it a privilege to be here to represent the Bureau of Reclamation.

Despite the changes taking place all around us these days, and the necessity for financial prudence in our business affairs, there remains a need that is constant for the well being of us all. That need is an adequate supply of good quality water. Reclamation continues to work actively toward responsible management of our available water supplies and toward developing additional water resources to meet the needs of future generations.

A major reorganization was accomplished at the end of last year with the merging of the Bureau's Lower Missouri Region with the Upper Missouri Region to become the Missouri Basin Region. This has brought the entire Missouri River Basin under one Bureau management team creating a more efficient regional operation realizing significant cost savings amounting to approximately $3 million per year. This move was also accomplished with a minimum of disruption to our staffs and programs.

The President's fiscal year 1987 budget request for the Bureau of Reclamation represents the amounts needed to maintain a sound water resource development program in the West. The request of $853 million includes $577 million for the Construction Program, $150 million for Operation and Maintenance, $40 million for the Loan Program, $28 million for General Investigations, and $58 million for other purposes.

The total represents an increase of $109 million over the $744 million appropriated for fiscal year 1986 for Reclamation activities under the fiscal year 1986 Energy and Water Development Appropriations Act, including $33 million in reductions in budget authority as a result of P.L. 99-177, the Balanced Budget and Emergency Deficit Control Act of 1985.

The total impact of P.L. 99-177 on the Bureau of Reclamation is the permanent cancellation of $34 million in budget authority, an additional decrease of $6 million in fiscal year 1986 spending authority, and a loan limitation decrease of $2 million. The effect on outlays for the Bureau of Reclamation is a fiscal year 1986 decrease of $30 million.

In fiscal year 1986 we reduced our request for new budget authority in recognition of the large carryover balances in the Construction Program. Although the 1987 request reflects an increase over the 1986 budget, it results in a relatively constant workload and expenditure level for Reclamation. For example, actual obligations were $1.09 billion in fiscal year 1985, and are estimated to be $1.04 billion in both 1986 and 1987. Actual outlays were $954 million in 1985, and are estimated to be approximately $1,008 million and $987 million in 1986 and 1987, respectively. In sum, even though our request for budget authority rises in 1987, our expenditures are decreasing, consistent with the President's deficit reduction goal.

In the Construction Program, we are projecting a decrease in outlays (i.e. expenditures) of approximately $65 million, or almost 10 percent. Expenditure of funds contributed by non-Federal entities for up-front financing and uprating of the generators at Hoover Dam partially offset this reduction in outlays, as the Bureau's total 1987 outlay estimate is approximately $21 million below that of 1986. The way things have gone so far in 1986, it appears we have made a lot of progress in our efforts to reduce the large carryover balance in the Construction Program.

Reclamation will follow the Presidential policy for water project financing and cost-sharing objectives. Project beneficiaries will bear a part of the cost of financing new project development; their share is worked out on a project by project basis.

The request of $577 million for the Construction Program provides for continued construction on 61 projects. Work will begin on one drainage and minor construction project and up to six safety of dams initiatives. Preconstruction activities will begin on the Spring Creek Toxicity Control Project pending agreement with the Environmental Protection Agency on project funding. While there are no new construction project starts planned in 1987, $42 million will be available for the four projects first funded in 1985, which includes $15 million in non-Federal cost sharing.

The contract for modifications at Buffalo Bill Dam will be awarded in fiscal year 1987. Funds of $13 million are needed to finance ongoing contracts plus this new contract. $10.5 million is also available during 1987 for this work from the State of Wyoming.

The Boulder Canyon Project in Arizona and Nevada will require $6 million. These funds are for improvements of the visitor facilities around Hoover Dam. The dam remains one of the Bureau's proudest accomplishments. This past year we celebrated Hoover Dam's 50 years of operation. The celebration drew extensive and favorable recognition from major media around the nation.

Work on the Headgate Rock Hydroelectric Project in Arizona will continue during fiscal year 1987. The amount of $6.8 million will fund continued construction on the powerplant.

The last of the four new starts funded for the first time in the Fiscal Year 1985 Supplemental is the Animas-La Plata Project. $1 million is provided for this project in fiscal year 1987. Construction of this project is conditioned on reaching agreement with the States for project cost sharing and financing. In addition to the Bureau's funds, the budget assumes that Colorado and New Mexico will contribute $4.2 million in 1987. We are currently negotiating an up-front cost sharing agreement with the States in order to reduce the effective cost of this project to the U.S. Government.

The budget includes $204 million allocated to the Central Arizona Project to continue construction. This level of funding will maintain the current schedule to complete the Tucson Aqueduct by 1991. We are currently negotiating with the local districts to reach an agreement on up-front financing of several major features of the Central Arizona Project. The budget request is consistent with the schedule being discussed in the negotiations.

During 1987 construction will continue on the Tucson Aqueduct and associated pumping plants, transmission facilities, regulatory storage facilities, and safety of dams activities. Construction will also continue on one Indian and five non-Indian distribution systems and one joint-use main delivery canal.

The funding request for the Central Valley Project in California is approximately $30 million. This includes $11.5 million to continue the joint Federal-State study of the environmental and economic impacts of and potential solutions to irrigation drainage problems in the San Joaquin Valley, and to complete preparation of the clean-up plan for Kesterson Reservoir. No funds are requested at this time for actual clean-up pending submission of the clean-up plan to the State of California in December 1986.

Construction of Brantley Dam in New Mexico will continue as well as acquisition of land and rights. This work will require $24 million in fiscal year 1987.

Work on the Columbia Basin Project in Washington, including the Third Powerplant will require $31 million in 1987.

Funds of $51 million are requested for the Colorado River Salinity Control Projects. Work will continue on the Yuma Desalting Plant and related facilities. Construction will continue on the Grand Valley, Paradox Valley, and Las Vegas Wash units.

Funds amounting to $18 million are being requested in fiscal year 1987 for the Garrison Diversion Unit in North Dakota. The budget assumes that the required authorizing legislation will not be passed by March 31, 1985. The fiscal year 1987 request funds an orderly shutdown of this project.

In Nebraska, construction of Calamus Dam, part of the North Loup Division of the Pick-Sloan Missouri Basin Project, has been completed and initial filling of the reservoir began last fall. Construction of the Mirdan Canal and lateral system are to be completed in fiscal year 1986. With funding of $14 million in fiscal year 1987, work will be completed on the Geranium Canal and lateral system.

McGee Creek Project in Oklahoma is scheduled to be operational in June of 1986 and will provide supplemental municipal and industrial water to Oklahoma City and surrounding communities. Construction of access roads to recreation and scenic areas and acquisition of land will continue during 1987 with funding of $7.8 million.

$83.8 million has been requested for the Bonneville Unit of the Central Utah Project for the relocation of U.S. Highways 40 and 189, and the construction of the Alpine Aqueduct Reach 2. Construction will continue on Upper Stillwater Dam, which is a roller compacted concrete structure, Doc's Diversion Dam and Feeder Pipeline, and Rhodes Diversion Dam. The districts that will benefit from this project have recently voted to amend the repayment contract providing larger sums to the Treasury.

In South Dakota, the Bureau will continue to administer funds for construction of the WEB Rural Water Development Project. The request is for $21.5 million. The WEB Project will supply water from Lake Oahe for domestic use to rural residents and towns.

Construction of fishways and screen structures will be completed at six sites and initiated at seven other sites in Washingtion under the Yakima Fish Passage and Protective Facilities Project. This work will require $12 million in 1987.

At various locations throughout the 17 Western States, funds of $4 million are requested for Rehabilitation and Betterment work; for Safety of Dams work, $40 million; and for Drainage and Minor Construction activities, $35 million. Development of Recreation and Fish and Wildlife facilities will require $13 million in fiscal year 1987.

The fiscal year 1987 Operation and Maintenance program of $150 million is aimed at preserving the operation and structural integrity of aging facilities, increasing productivity by uprating facilities on existing projects, and minimizing the present and future Federal cost of operation, maintenance, and repair or replacement of facilities, while devising and employing ways to assure a quicker return on the Federal investment.

Operation and maintenance of 34 projects are provided for in the 1987 request as well as funds for associated programs. Approximately one-third of the $150 million request will go for normal operation and maintenance of Federal facilities in the Central Valley Project in California and for payments to the State of California for past water delivery charges. A new program will be initiated for the Brantley Project in New Mexico. The main unit transformer at the Columbia Basin Project will be replaced.

Another $16.8 million of the new budget authority will be allocated to various projects of the Pick-Sloan Missouri Basin for their Operation and Maintenance work. Extraordinary maintenance at the Middle Rio Grande Project in New Mexico will continue restoration of the low-flow conveyance channel that maximizes delivery of water to Mexico under the Rio Grande Compact.

Uprating of powerplants and generators will continue at various Federal facilities throughout the West. At the completion of all uprating programs ongoing in fiscal year 1987, total power capacity will be increased by 128.5 megawatts. Our program will continue to design and replace needle valves at 20 Reclamation dams. All Bureau needle valves will be investigated and replaced, if still needed, with jet-flow gates by fiscal year 1991.

Other objectives in the 1987 program will be to provide for replacement and addition items and extraordinary maintenance to protect facilities to ensure adequate delivery of project water and power, ensure the safety of existing structures, upgrade or increase facilities where necessary, improve service to the general public, replace worn equipment, and improve water and power conservation.

We will continue the administration of the Reclamation Reform Act of 1982, including the provisions of Section 203(b) which must be fully implemented by April 12, 1987.

Under the Loan Program, we are requesting a total of $40 million compared to a fiscal year 1986 appropriation of $38 million. Funds of $2 million are included for three new loans contingent upon enactment of legislation to increase the appropriation ceiling and provide for reimbursement of loans for all project purposes at current Treasury borrowing yields plus 1/8th of one percent. The new loans are Middle Creek Dam Rehabilitation Project in Montana, United Water Conservation District in California, and San Bernardino County Project in California. Under the Distribution System Loans Act work will continue on one project and under the Small Reclamation Projects Act, work will continue on 14 projects.

The request for the General Investigations Program is $28 million. Funds will be provided for 27 ongoing investigations and for four ongoing advance planning projects. Funding of $1 million will be available for four new investigations and three new advance planning studies. The major emphases are increasing municipal and industrial water supplies, enhancing water quality and assisting in meeting irrigation and energy needs.

Included in the General Investigations appropriation account request are funds of $9.7 million for engineering and research activities. This will allow continued development of technologies to increase water supplies by cloud seeding techniques and will provide for studies to assist in the planning, design, construction, and operation of multipurpose water resource projects. Other areas under study include dam safety, water conservation, maintenance and repair, power generation, construction materials, and fluid mechanics.

The reduction in the General Investigations Program of $5 million from fiscal year 1986 is proposed to meet deficit reduction objectives, to establish funding levels for our planning program which bear a reasonable relationship to expected future funding levels for new starts, and to target planning efforts on those projects which are likly to generate significant cost-sharing and have the best prospects for being built.

The Bureau of Reclamation is also continuing its Foreign Activities Program to share its expertise with other nations. Advisory assistance and cooperative programs are continuing with 15 foreign nations. The estimate for activities and services in fiscal year 1987 is $12 million. All technical assistance and training programs are fully reimbursed to the Bureau by another Government agency, an international funding organization, or a foreign government.

Summarizing our proposal, in fiscal year 1987 we are requesting: $28 million for project investigations and research to identify solutions to future water needs and to advance the state-of-the-art; $577 million for the construction of projects already authorized by the Congress; $150 million to operate and maintain facilities to assure greater efficiency and safety; $40 million to assist local entities with their own water projects; and $57.7 million to fund the other responsibilities and functions necessary in carrying out the Reclamation program.

Passage of the Bureau of Reclamation's budget as proposed by the President will allow the continued development and conservation of water resources in the West for the benefit of all Americans. This proposed budget represents an efficient and necessary program to provide important water resources to the arid West.

That concludes my presentation and I invite any questions you may have.

Mr. **Bevill.** Very good.

We are glad to have you with us, Mr. Broadbent. The Secretary, of course has appeared before this committee many times, and we are always glad to have you with us.

I believe you have appeared before us in three different capacities.

Mr. **Hodel.** In the last five years, Mr. Chairman.

Mr. **Bevill.** In the last five years. So, that's quite a record.

NEW CONSTRUCTION STARTS

Mr. Secretary, I notice that you didn't ask for any funds for new construction starts. Did you request OMB for any new construction start funds?

Mr. **Hodel.** I don't believe we did. No, I'm assured we did not.

Mr. **Bevill.** Do you have any projects that are eligible to be new starts in 1987?

Mr. **Duvall.** We have four projects that were initially funded in 1985, and funding is included in this budget request to carry those projects forward.

Mr. **Bevill.** Do you have any projects other than that that are ready for construction?

Mr. **Duvall.** No.

Mr. **Bevill.** On those four: I wish you would put in the record the status of each for the benefit of the committee.

Mr. **Duvall.** We will submit that for the record.

[The information follows:]

1985 NEW STARTS STATUS

Buffalo Bill Dam Modification Wyoming - The cost sharing agreement with the State of Wyoming was signed by the Assistant Secretary for Water and Science and the Governor of Wyoming on March 29, 1985. The first construction contract for the project was awarded on November 12, 1985, for the Shoshone River bridge, which will provide access to the proposed Buffalo Bill powerplant. Bids have been awarded for a second contract which will quarry, process, and stockpile riprap materials for future use in construction of the reservoir dikes. Agreements were executed with the Wyoming Highway Department and the Wyoming Recreation Commission for preconstruction activities related to relocation of U.S. highways 14, 16, 20, and the recreation facilities, respectively. Land appraisal activities for acquiring lands for the enlarged reservoir began in December 1985.

During fiscal year 1986, construction will continue on the Shoshone access bridge and the riprap contracts; and final design preparation will continue on the Shoshone Canyon conduit modifications, the powerplant completion, the dam and spillway modifications, and the North Fork dike. Contracts are scheduled to be awarded in June 1986 for the powerplant's turbines and generators, and in September 1986 for the Buffalo Bill powerplant. Design data and preconstruction activities will continue on South Fork and Diamond Creek dikes and relocation of the highway and recreation facilities. Land acquisition will be initiated for the enlarged reservoir.

Boulder Canyon Project, Arizona-Nevada - Total repayment for Boulder Canyon Project will be secured from power customers through contracts administered by the Western Area Power Administration of the Department of Energy. The Hoover Powerplant Act of 1984 provided that the cost of the visitor facilities improvements would become a repayment requirement of the Boulder Canyon Project. Repayment would begin June 1, 1987, or when the facilities are substantially completed, if later. The Act mandated a 50-year repayment period at current Treasury interest rates.

Design data collection for the transmission tower and roadway relocations, and the elevator shaft has been completed. Negotiations are underway with an architectural and engineering firm for design of the tour center and two new parking structures. A contract was awarded on March 14, 1986 to relocate a transmission tower and power lines. Other contracts will be awarded in FY 1986 to design the tour center and two parking structures. Design data gathering for the tour galleries will continue.

Headgate Rock Hydroelectric Project, Arizona - Since the Headgate Rock Hydroelectric Project is solely for the benefit of the Colorado River Indian Reservation, there has not been a non-Federal entity desiring to participate in the project construction identified. We believe that the Act does not require a cost-sharing agreement for this project based on the legislative history. The application of Bureau of Indian Affairs' current policy of establishing power rates sufficient to amortize the construction cost of the powerplant would be consistent with Congressional intent.

An Advance Planning Report was completed in June 1980 and a Finding of No Significant Impact was filed August 1980. Design work and specifications are essentially complete. This project is being constructed under the authority of the Snyder Act and will provide 19,500 kilowatts for pumping and other uses on the Colorado River Indian Reservation near

Parker, Arizona. During FY 1986, designs and specifications will be completed. The contract for furnishing and installing turbines, generators, and auxiliary equipment, and the contract for the powerplant and transmission lines are scheduled for award.

Animas-LaPlata Project, Colorado - Negotiations between the Administration and the States of Colorado and New Mexico for up-front cost sharing on Animas-LaPlata have been ongoing since September 1985. The Colorado Ute Tribes Water Rights Negotiating Forum has responsibility for negotiating the Winters Doctrine water rights claims of the Southern Ute and Ute Mountain Ute Tribes. The States' draft proposal is expected to be forwarded to the Secretary of Interior for review in March 1986. A final agreement which may require State legislative action, is required by June 30, 1986, to allow the construction of the project to begin with funds appropriated in August 1985.

The Definite Plan Report and Land Certification for Animas-LaPlata was approved and the Final Environmental Statement was filed. Congress appropriated funds in FY 1985 to initiate construction, contingent upon satisfactory negotiation of cost sharing agreements by June 30, 1986.

ANIMAS-LA PLATA PROJECT COST SHARING

Mr. **Bevill**. Mr. Secretary, I note that you're requesting $1 million for the Animas-La Plata Project in fiscal year 1987. What is the outlook, at this time, on the cost-sharing contract?

Mr. **Hodel**. It is hard for me to predict, Mr. Chairman. The $1 million that we requested is contingent upon reaching a cost-sharing agreement. Extensive negotiations have gone forward. We have been taking the position that somewhere between $200 and $300 million of up-front costsharing would be required.

The proposal to date, I think, from the States has not exceeded $180 million, so we are still a bit apart. But, as is true with any negotiation, it sometimes seems that you are miles apart, and then suddenly at the right point it comes together. It's hard for me to predict when it will, or how it will, but I know that there is a great deal of continuing interest in that project in the area. It solves a number of important problems for the Department with regard to Indian water rights issues, and it would be desirable if we could work out a satisfactory agreement with them, but at this point it would be a guess on my part.

Mr. **Bevill**. So you and your Department do support this project.

Mr. **Hodel**. Subject to an appropriate up-front cost-sharing agreement, we have supported the proposal.

Mr. **Bevill**. And these negotiations are under way?

Mr. **Hodel**. Yes, they are ongoing. Periodically, I hear that we are expecting to receive a formal proposal from the State interests' but that may simply be a step in the negotiating process, depending on what it contains.

Mr. **Bevill**. The Chair recognizes Mr. Myers.

Mr. **Myers**. Mr. Chairman, Indiana doesn't lie within the Bureau of Reclamation's purview. So, I will reserve my time, and yield to Mr. Rudd.

Mr. **Rudd**. I certainly thank my colleague for yielding.

Mr. Chairman, and gentlemen, first of all welcome to the Hill again, Mr. Secretary. Commissioner, congratulations to you for assuming the high position to which the President and the Secretary have named you. Good luck in all of your ventures here on the Hill, especially before this Committee, in obtaining funds for the Central Arizona Project, and keeping it on line.

Mr. Assistant Secretary, I certainly have been very pleased to see the excellent representation that you have given our government and the people of the United States in the high position which you hold. Congratulations on your new position, but, your decision to leave the beautiful banks of Potomac and return to the banks of that most noble and most successful experiment known as Lake Mead is understandable, and I wish you all kinds of good fortune there.

Mr. **Broadbent**. Thank you.

Mr. **Rudd**. With those flowers thrown out, let me get down to business.

I have some questions that I want to ask because they are so important to the welfare of the people of our country, and that of the people who live along the banks of the Colorado and in the west also.

DAM SAFETY WORK

Let me ask you what the Bureau's capability is, Mr. Secretary—or Mr. Commissioner—on the dam safety work that is being conducted at this moment on Stewart Mountain Dam, and primarily on Roosevelt Dam. Two, really, different questions.

Mr. **DUVALL**. I think we should get you a complete answer for that.

We have $2.3 million in the 1987 budget to proceed with that dam safety work. I'm not sure that I understood the rest of your question.

Mr. **RUDD**. So your capability is an additional $2.3 million—is that right—over and above what you have submitted?

Mr. **DUVALL**. No. Oh, excuse me. You wanted additional capability?

Mr. **RUDD**. Yes, sir.

Mr. **DUVALL**. No, we have no capability in addition to what we have in the budget. Not for FY 1987.

I really would like to give you a complete statement on it for the record.

Mr. **RUDD**. I would appreciate that, for the record. If you will, I would like a copy of that as soon as it is done so I can take a look at it.

Mr. **DUVALL**. I would be happy to supply it.

Mr. **RUDD**. Will any programmed funding—reprogrammed funding—be available for dam safety work?

Mr. **DUVALL**. At the present time, as I explained in my statement, our capability for the fiscal year that we are presently in appears to be absorbing the traditional carry-over funds. We're planning at this moment to go into fiscal year 1987 without any unobligated balances to carry over into the next year.

At the moment the most recent report that we have generated in the Bureau of Reclamation indicates that we are achieving that program accomplishment. In fact, we have a little bit of a deficit right at this moment. So, if the construction year continues as strong and as effective as it has been up to this point, we will not have any reprogramming capability.

Mr. **RUDD**. Let me ask you to include that in the response that you are going to provide on the other two questions.

Mr. **DUVALL**. I would be most happy to.

Mr. **RUDD**. To include whatever might be in the pipeline. Reprogramming and any other capability that you might have with regard to those first three questions.

Mr. **DUVALL**. I would be most happy to.

Mr. **RUDD**. I would appreciate that very much.

UP-FRONT FUNDING FOR WATER PROJECTS

Mr. Secretary, we have discussed up-front funding, as you discuss it in every meeting on the Hill, I guess, for water projects. And we have also discussed tax-exempt bonding—the need for it in the west. We are in a catch-22 position.

With the advent and the legacy of David Stockman, suddenly it became important—in looking for additional funds for budgetary matters—to see if we couldn't get up-front funding, and Arizona has certainly led the field in attempting to produce up-front funding. Let me tell you that it was all based on whether or not we could have tax-exempt bonding. So, without tax-exempt bonding there won't be any up-front funding. Basically that's what I'm talking about. So, I'm not asking you for a position on this matter at all, but I would like you to very seriously consider the effect—the impact—of requiring up-front funding and requiring, and legislating, that there will be no tax-exempt bonding. Because with tax-exempt bonding in these specific areas that are pay-backs, they are loans from the government, in effect—and they benefit all of the people—we can produce up-front funding. And, without it, we won't be able to produce it. But I'm not asking for a position. All I am asking you to do is to very seriously consider it, look into it, and in your discussions with the President perhaps you could become aware of the very seriousness of this situation.

My question to you is: will you give that very serious consideration?

Mr Hodel. Yes, I will, Congressman.

Mr. Rudd. Thank you.

CENTRAL ARIZONA PROJECT

In the cost-sharing agreement between your Department and the State of Arizona, the State is going to provide about $371 million in cost-sharing for the Central Arizona Project. Have you made any plans for the time when that agreement will be signed?

Mr. Hodel. No. I have not yet seen the proposed agreement. I understand it is in the Department.

Mr. Rudd. But no date has been set?

Mr. Hodel. I don't have a date.

Mr. Rudd. All right.

You are confident that the FY 1987 appropriations figure for the Central Arizona Project will afford you the opportunity to keep construction on schedule so that the main aqueduct, to Tucson, will be completed by 1991?

Mr. Hodel. Ninety-one? Yes.

Mr. Rudd. That's still the date, and there's no problem with that at all?

Mr. Hodel. That was the mandate I provided in the preparation of the budget, and I have been very clear both in the budget process and publicly that we are committed to continuing to fund that project so that we can meet the 1991 delivery date.

Mr. Rudd. Over the years we have had some problems— at least problems in my eyes and the eyes of the people who are trying to provide future water and better economy for the State of Arizona, for example—with extremists in the environmental field who continue to file various kinds of lawsuits to impede the successful completion of various projects. I won't go through history on it, but we've experienced this several times. Currently we have a lawsuit filed, which appears to be a serious lawsuit, under the name of the

National Coalition to Stop Cliff Dam—by several environmental organizations. Their goal is to stop Cliff Dam.

In one of the hearings, the attorney for the plaintiffs had indicated to the Federal judge that his goal was to stop Cliff Dam, and the judge responded to him telling him that he had no authority nor intention of filing a decree to stop Cliff Dam, that his area was to look into the matter to see whether or not you, Mr. Secretary, were complying with environmental impact statements on the Cliff Dam area.

So, that seemed to me to be scolding these people to some extent.

My question to you is, how much of an adverse impact will that have on your construction schedule in this project?

Mr. **Hodel**. Let me take a stab at that and then ask for expansion from the Commissioner or Mr. Klostermeyer.

It will depend largely on what the judge's conclusion is, I would expect. If we are restrained from going forward it should have a month-for-month or year-for-year effect on our program. It will depend on the decision of the court.

Mr. **Rudd**. In any case, it will cause an expectation that the project will be held up additionally, and expensive time will be spent in trying to complete it. I thought you might have a handle on that.

Mr. **Hodel**. I think what you can generally, but not absolutely, count on are delays, because in projects of this type usually we don't have a lot of slippage in the schedule. If we are delayed a month it has at least a month's effect on the ultimate completion of the project.

Mr. **Rudd**. But it gives you an additional worry—to prevent some——

Mr. **Hodel**. If we have to go back and do something differently, if we have to expand on the EIS, that will take additional time and the project can't proceed on the current schedule until that's been done.

Mr. **Rudd**. Well, that is unfortunate.

Can you tell me what additional contracts will be let in the next three to six months on the Central Arizona Project—contracts of major consequence?

Mr. **Duvall**. I think from the standpoint of within a timeframe as you have described, we would want to go back and review your question and give you an answer for the record.

[The information follows:]

Central Arizona project contracts scheduled for award March 1-September 30, 1986

Contract	*Award date*
Blowoff Structure Modification—Aqua Fria and Salt River Siphons—Granite Reef Aqueduct.	March 1986.
Tucson Aqueduct Reach 3 Station 724 to 762+75, Reach 4, and Twin Peaks, Sandario, and Brawley Pumping Plants Excavation.	April 1986.
Snyder Hill Road Relocation—Tucson Division	September 1986.
Sewer Line Relocation—Tucson Division	Do.
Completion Contract—Brady, Picacho, and Red Rock Pumping Plants.	May 1986.
Prime Contract—Twin Peaks and Sandario Pumping Plants	July 1986.
County Center Relocation—New Waddell Dam	July 1986.

Central Arizona project contracts scheduled for award March 1-September 30, 1986—Continued

Contract	Award date
Foundation Cutoff—New Waddell Dam	July 1986.
O&M Facilities and Equipment—Tonopah Irrigation District	March 1986.
Phase I Pipelines—Queen Creek Irrigation District	Do.
Phase II Pipelines—Queen Creek Irrigation District	June 1986.
Farm Turnouts Meter—New Magma Irrigation and Drainage District.	March 1986.
Lateral System C—New Magma Irrigation and Drainage District.	Do.
Supervisory Control System—Queen Creek Irrigation and Drainage District.	Do.
O&M Facilities and Equipment—HoHoKam Irrigation and Drainage District.	May 1986.
Block 1 Laterals—HoHokam Irrigation and Drainage District	July 1986.
West Distribution System Unit 1 (formerly Santa Rosa Distribution System Unit 1)—Maricopa-Stanfield Irrigation and Drainage District.	March 1986.
Farm Turnout Meters—Maricopa-Stanfield Irrigation and Drainage District.	Do.
West Distribution System Unit 2 (formerly Santa Rosa Distribution System Unit 2)—Maricopa-Stanfield Irrigation and Drainage District.	May 1986.
East Main Canal—Maricopa-Stanfield Irrigation and Drainage -District.	September 1986.
Farm Turnout Meters—Central Arizona Irrigation and Drainage District.	March 1986.
Supervisory Control System—Central Arizona Irrigation and Drainage District.	July 1986.
Central Main Canal—Central Arizona Irrigation and Drainage District.	Do.

Mr. **Rudd**. All right. I am speaking specifically of the Picacho area of the project. There will be some major contracts let for that very soon, I think, will there not?

Mr. **Duvall**. That is correct but I would want to check the timetable——

Mr. **Rudd**. In the nature of $30 million, or something like that?

Mr. **Duvall**. There are some significant contracts that will be let in the next few months.

Mr. **Rudd**. Thank you. I don't think I need an additional answer over and above that.

Do you feel that the cost-sharing agreement being offered by the State is a good example for other projects that will benefit from this in the future?

Mr. **Hodel**. Yes.

ARIZONA GROUNDWATER PROJECTS

Mr. **Rudd**. What groundwater projects are being carried out in the State of Arizona? I think your department, Mr. Secretary, is charged with responsibility in that type of endeavor.

Mr. **Hodel**. That is correct. Perhaps the Commissioner should answer specifically as to the State of Arizona.

Mr. **Rudd**. All right. And that can be for the record, unless you would like to give me a general answer.

Mr. DUVALL. The groundwater project that we are advancing in the State of Arizona at the moment is the Pima County/Santa Cruz River Groundwater Project. That study is underway at the present time.

Mr. RUDD. Well, last year's conference report accompanying the FY 1986 Energy and Water Development Appropriations Bill directed that the Scottsdale, Arizona, area be included under the Phase I provisions of the Groundwater Research Demonstration Program. My question to you, Mr. Secretary and Mr. Commissioner, is: what have you done in response to the language in that conference report?

Mr. DUVALL. The Scottsdale study is being considered as part of the Groundwater Demonstration Program, which involves a study of groundwater projects throughout most of the western states. The site selection is something that we are doing in cooperation with the State. We are in that process at the present time. Scottsdale is one of the potential sites for that.

Mr. RUDD. So, locally, the decision will be made where the potential aquifers are, and then you will take their advice and go from there if proper authorization and funding is available?

Mr. DUVALL. That is correct. That is a five-year test program.

Mr. RUDD. There have been very successful experiments in groundwater recharge in California, which have been ongoing for some time. I think also in Colorado. And we hope to duplicate that in Arizona because water is so vital to everybody's future, but especially to people who sometimes live in the desert regions.

We mentioned the Santa Cruz Groundwater Project; I think the bill in 1986 provided $100,000 for that purpose. So, I take it from the general answer you gave me that those funds are now at work in that particular project.

Mr. DUVALL. That's correct.

SALT RIVER SAFETY OF DAMS

Mr. RUDD. The conference report, again, in the FY 1986 bill, directed that construction activities should commence on the two Salt River dams as part of the Safety of Dams program. What is the status of that work? And what funds are budgeted for 1987 to continue the work?

Mr. DUVALL. In the Salt River, dam safety work is underway on the Stewart Mountain Dam. We have $2.3 million in the budget for that project.

Mr. RUDD. Well let me do this. Could you combine that with the earlier questions I asked on capability, which will build on what you've done in response to that question. I would appreciate it very much. Compose that as one package.

[The information follows:]

SAFETY OF DAMS

The amounts requested in the fiscal year 1987 budget request for dam safety work on Stewart Mountain Dam ($2.3 million) and modified Roosevelt Dam ($1.1 million) constitute the Bureau of Reclamation's full capability on those projects. These funds should be adequate to do the work as programmed. Should additional needs arise, appropriate fund transfers will be made if funds are available.

Mr. DUVALL. The number for Roosevelt Dam is $1.1 million.

Mr. **Rudd**. And this is what the earlier questions on capability were directed to.

Mr. **Duvall**. Yes.

Mr. **Rudd**. I thank you.

STATUS OF CAP

I duly noted the funding request for the Central Arizona project for FY 1987. Can you give me an overall status of the project and the scheduled completion dates?

Mr. **Duvall**. I think we probably should submit that for the record.

Mr. **Rudd**. All right.

[The information follows:]

CENTRAL ARIZONA PROJECT

On the Central Arizona Project, Non-Indian Distribution System, work continued on construction and preconstruction activities and approval of distribution system planning reports. Nine irrigation districts have signed water services subcontracts and submitted approved planning reports. Six of the districts now have validated repayment contracts. In addition, one municipal water company has submitted an approved planning report and executed a repayment contract. Construction activities underway include the Harquahala Valley Irrigation District's Link Canal, the Westride Canal, and Northeast Main Canals and Laterals; Pumping Plants and lateral systems A, B, and D for the New Magma Irrigation and Drainage District; the Tonapah Irrigation District system; the North Distribution System for Central Arizona Irrigation and Drainage District; the Chapparral City Water Company system; and Santa Rosa Canal Divisions A and B.

On the Water and Power Distribution Systems, work is complete on all major contracts of Havasu, Bouse Hills, Little Harquahala, and Hassayampa Pumping Plants; the structure and the pumps, valves, and motors for Salt-Gila Pumping Plant; three tunnels and seven siphons on the Granite Reef Aqueduct; Granite Reef Aqueduct Reaches 1 through 12; Granite Reef Aqueduct check structures completion, power and control cables, turnouts, and repair and cleanup; Salt-Gila Aqueduct Reaches 1 through 4; Salt-Gila Aqueduct check structures completion; Tucson Aqueduct Reach 1 Stations 110 to 370; drilling and soilcrete columns contracts on New Waddell Dam; test grouting on Roosevelt Dam; Davis-Parker 230-kV Transmission Line; Davis-Parker Switchyards 230-kV additions; seven contracts related to various electrical facilities; and a control center. Land acquisition is complete on Granite Reef and Salt-Gila Aqueducts and associated transmission facilities. Final environmental impact statements have been completed for overall Central Arizona Project, the Havasu Pumping Plan and Buckskin Mountains Tunnel, Granite Reef Aqueduct, Granite Reef Aqueduct Transmission System, Tucson Aqueduct, Regulatory Storage Division, and the Water Allocations.

The Central Arizona Project completion dates include initial operation of Navajo Project, May 31, 1974. Initial water via the Granite Reef Aqueduct was delivered to the Phoenix metropolitan area in 1985 as scheduled. Initial water delivery to users of the Salt-Gila Aqueduct and to users in Pinal County is scheduled in 1986. Water deliveries to northern Pima County and the Tucson area are scheduled for 1989 and 1991 respectively. Water delivery to the Central Arizona Indian communities is scheduled as follows: Salt River Pima Maricopa Indian Community, 1988; Ak-Chin Indian Community, not later than 1988; and Chui Chu Papago Indian Community, 1990. The Chui Chu Papago system has been delayed two years at the request of the Indian community to await the outcome of water rights settlement legislation to be proposed. Firm water delivery dates to the remaining Indian reservations, Gila River, Fort McDowell, San Carlos-Apache, Yavapa-Prescott, San Xavier-Papago, Schuk Toak-Papago, Pascua Yaqui, Camp Verde, and Tonto Apache Indian Reservations will be determined as planning is completed.

Ultimate water delivery to the Non-Indian Distribution Systems are scheduled as follows: Harquahala Valley and Tonopah Irrigation Districts, New Magma Irrigation and Drainage District, and Chapparal City Water Company in 1986; Queen Creek, San Tan, and Chandler Heights Citrus Irrigation Districts in 1987; and HoHoKam and Maricopa-Stanfield Irrigation and Drainage Districts in 1988; City of Prescott in 1989; and Central Arizona Irrigation and Drainage District in 1990. The schedule for delivery to the remaining systems will be determined as planning is completed.

Mr. Rudd. You indicated earlier, Mr. Secretary, that it was on-line, and barring any unforeseen incidents such as lawsuit and a few things like that the schedule is pretty much on-line.

Mr. Hodel. My understanding is that the funding for the project is sufficient to keep the Tucson Aqueduct on schedule to meet that 1991 delivery date.

Now, the other components of Plan 6 have different dates. I thought the response to the question you were directing to the Commissioner, which we will also supply for the record, is that it will depend first of all on such things as the lawsuit and secondarily, but very directly, on what we end up with in the way of an agreement on an up-front cost-sharing arrangement.

But, included in the up-front cost-sharing agreement, there are specific dates that are identified for those features. We can provide that for you.

[The information follows:]

Up-Front Cost-Sharing

The Buffalo Bill Dam Modification project in Wyoming is the only one on which negotiations are complete. Based on current cost estimates, the State of Wyoming will finance about 40 percent of the total cost of the project. The 40 percent does not include the present value of beneficiary repayment of other federally funded portions of the project. This would increase the share to about 63 percent.

Currently, cost-sharing discussions are taking place on both the Animas-LaPlata and Central Arizona projects. On new construction, up-front cost-sharing by non-Federal partners is being negotiated on a case-by-case basis under the general policy guidance provided by the January 24, 1984, letter from President Reagan to Senator Laxalt. The ratio of up-front, non-Federal construction financing to construction cost being negotiated for both the Animas-LaPlata Project and Plan 6 of the Central Arizona Project is about 30 percent. If the present value of non-Federal construction repayments is considered, the ratio is significantly higher. No cost-sharing discussions on any other projects authorized for construction are taking place at this time.

Mr. Rudd. I don't want a response to this, but my guess is that without Plan 6 we are about 80 percent complete, and with it maybe 50 percent complete. Something like that.

Mr. Hodel. I don't know, either.

Mr. Rudd. Thank you, Mr. Secretary, Mr. Commissioner, Mr. Assistant Secretary, and Mr. Chairman. I thank you very much.

MR. WHITTEN'S REMARKS

Mr. Whitten. Mr. Secretary, I just want to welcome you before the committee, and say that I appreciate your background. As I have stated throughout the years, our real wealth is our country, and our development of it is absolutely necessary if we are going to do all of the other things that we have done.

The only reason that we are able to put up with what we have today is because we have supported development of our natural resources and it's to that that we have look to take care of our present problems.

We welcome you before the committee, and we look forward to working with you in the future as we have in the past.

Mr. Hodel. Thank you, Mr. Chairman. I appreciate those comments.

As I said earlier, I think when you were not here, we appreciate the support that you have given these projects over the years. Chairman Bevill and the other members of this committee have made tremendous differences in the way in which people live in this country, and particularly in the western part of the United States where the Bureau is particularly active.

Mr. **Whitten**. I would like to point out that the name of this country is the United States. Just about everything we are proud of has been by joint effort so far. I am proud of my record. We have tried to look at all sections of the country, and I think with your help, and others, have done a pretty good job. We have got some troubles right now, though.

Thank you very much.

Mr. **Hodel**. Thank you, Mr. Chairman. I think your record is excellent on that.

Mr. **Bevill**. The Chair recognizes Mrs. Smith.

Mrs. **Smith**. Thank you, Mr. Chairman.

Welcome Mr. Secretary, and Mr. Broadbent, Assistant Commissioner Klostermeyer, and Commissioner Duvall. We appreciate working with you through the years.

COST CEILINGS OF CONSTRUCTION PROJECTS

Mr. Secretary, would you please discuss projects that are under construction that are close to the indexed cost ceiling, such as the North Loup Project out in Central Nebraska?

Mr. **Hodel**. If I may, I would like to ask the Bureau to respond to that.

Mrs. **Smith**. Yes.

Mr. **Duvall**. The North Loup Project is one project in our budget submittal this year that is approaching its ceiling as presently established by Congress. We are submitting a request to the Congress to increase that ceiling in the preparation for fiscal year 1987 expenditures.

Mrs. **Smith**. Thank you very much, Mr. Duvall.

Now, if the Appropriations Committee continues to approve funds to construct—say the North Loup Project—would you instruct the Bureau to go ahead with the money on schedule?

Mr. **Duvall**. Yes.

Mrs. **Smith**. And Mr. Hodel, do you agree with that answer—that you would instruct the Bureau to go ahead on schedule?

Mr. **Hodel**. Subject to advice from counsel, Mrs. Smith, with regard to whether or not we have authorization to expend the funds. We sometimes encounter a problem if we reach the authorization limit and if money is appropriated above that limit, unless the language adopted by Congress is sufficient to provide us with authority to expend. I'm usually advised by my lawyers that in those situations I don't have the authority to do that.

Mrs. **Smith**. Well, now what would you do if the House report language accompanying either the regular appropriations bill or the supplemental bill, directed the Bureau to continue construction?

Mr. **Hodel**. If it were in report language, and now I'm speculating on what my lawyers would do, I would expect my lawyers would tell me that that is not sufficient if we are encountering a clear authorization limit. If there is a ceiling in the authorizing bill, as there usually is, unless there is appropriations language, I would expect that they would tell me that I shouldn't do it.

In bill language it would make it quite easy for us because it's then an act of the Congress and this money should be expended.

Mrs. SMITH. If it were in report language in the Appropriations Bill?

Mr. HODEL. If it is in report language, which is not law, it would not assist us.

Mrs. SMITH. I see.

Mr. HODEL. It needs to be in law to allow us to exceed the limit that is in the authorizing law.

Mrs. SMITH. Now, are you telling me that if language is put into the statute appropriating construction funds in a supplemental or regular appropriations bill, then you would move to finish the construction on schedule?

Mr. HODEL. Yes. That is correct. Because then that is an act of the Congress, and it has the same force and effect of law as an authorizing bill, as I understand the lawyer's interpretation. We would be free to move forward then.

The problem arises when money is appropriated and we do not have authorization. Report language directing us or requesting us to expend it doesn't raise it to the level of law sufficient to give us the authority.

Mrs. SMITH. I have had research done indicating that the courts have held repeatedly that Congressional action is the final public policy authority for making spending decisions, regardless of whether or not the authorizing committee originates the policy.

Mr. HODEL. Unfortunately, if my lawyers advised me that I do not have authority to do something, I am very hard-pressed, then, to proceed to do it. It places me in an impossible position. So I am very much bound by what my lawyers tell me.

Mrs. SMITH. Well, we will try to convince them.

Now, I do want to thank the Secretary, and also I particularly want to thank Mr. Klostermeyer for all of his help along the way. If we hadn't had the help—and I want all of you to know this—of Mr. Klostermeyer at the time that we weren't sure whether or not the Administration had approved going ahead with the project, we could have had an unfortunate delay. So we are very grateful to all of you.

COST SHARING

Now I do want to pursue just one other subject. On costsharing: how much up-front money are you planning to require on new studies? And I expect that you are going to say to me, "Well, it will be on a project-by-project basis."

Mr. HODEL. My understanding is that on new studies we are requesting a 50/50 split.

Mrs. SMITH. Thank you. Then on new construction, such as for the Prairie Bend Unit in Nebraska, how much up-front money.

Mr. HODEL. On new construction, my understanding is that we pursue a case-by-case evaluation.

Mrs. **Smith**. Have any up-front cost-sharing agreements been signed for studies or for new construction?

Mr. **Duvall**. Yes.

Mrs. **Smith**. By you, for new studies or for new construction. And I want to know what the up-front money provisions are.

Mr. **Hodel**. We have one for the Buffalo Bill Dam modification which has been signed with forty percent.

Mrs. **Smith**. Forty percent? But you have no others that have been signed?

Mr. **Broadbent**. Yes, we have one on Hoover for 100 percent up-front money for the uprating of the generators; $126 million up-front money has already been approved. It is in the Federal Register right now, subject to power marketing regulations.

Mrs. **Smith**. Would you submit for the record whatever studies—or whatever construction projects you have approved on this? And I also, Mr. Chairman, have some other questions that I would like to submit for the record.

Mr. **Bevill**. Then answer for the record.

[The information follows:]

PROJECTS APPROACHING AUTHORIZED CEILINGS

Mrs. Smith. Mr. Secretary, please discuss projects under construction that are approaching authorized indexed ceilings and what you plan to do about this, with particular reference to the North Loup Division, Pick-Sloan Missouri Basin Development project.

Mr. Duvall. For those projects that will exceed the authorized appropriation ceiling, when appropriate we initiate legislative proposals to increase the ceiling. Such a proposal is in the process for the North Loup Division.

Mrs. Smith. Please provide a table showing all these projects, their original dollar authorized ceilings, the indexed ceiling, amounts invested in each to date, additional amounts needed to complete, and their current estimated total construction cost in current dollars.

Mr. Duvall. The following is a table showing projects under construction which are approaching authorized ceilings.

(the information follows)

NORTH LOUP DIVISION, P-S MBP - ADDITIONAL FY 87 NEEDS

Mrs. Smith. How much additional funding is needed over the budget request to keep North Loup construction on schedule in FY 1987?

Mr. Duvall. An additional $4 million can be used in FY 1987 to award a construction contract for Davis Creek Dam. This award had been delayed due to fiscal constraints, coupled with the need for an increase in the authorized appropriation ceiling. The $4 million is a revision of our earlier estimate of $8 million.

O'NEILL UNIT

Mrs. Smith: Please provide for the record a discussion of work planned on the studies and other work on the modified O'Neill Unit.

Mr. Duvall: Fiscal year 1987 funds will be used to continue the ground water recharge verification study and to initiate design and preconstruction work on Stage I construction of the ground water recharge test section.

The State-led study of a ground water recharge alternative to Norden Dam was completed in January 1985. A Department of the Interior task force found the proposed concept to be innovative and challenging but that it needs further study before Federal participation could be recommended.

In recognition of the very complex study and the State of Nebraska's interest in participating fully in this effort, a cooperative agreement is being negotiated with the Bureau of Reclamation, participating State agencies, and the pertinent divisions of the University of Nebraska. The cooperative agreement will stipulate how unresolved issues will be addressed, such as questions concerning state laws, boundary adjustments necessary to accommodate the recharge project, procedures for contract review, detailed public involvement plan, acceptability of repayment provisions, and the local sponsor's responsibilities. Cost sharing and leadership of specific activities such as public involvement will be further described in the cooperative agreement.

During fiscal year 1986, reevaluation of water user payment capacity and repayment commitment will be conducted and a study initiated to test and model the O'Neill recharge/recovery area, provide environmental compliance, and supply the hydrologic and geologic data necessary to support economic feasibility. The results of the work in fiscal years 1986 and 1987 are needed to develop reauthorization legislation.

PRAIRIE BEND UNIT, P-SMBP

Mrs. Smith. Please provide a discussion of the feasibility study on the Prairie Bend Unit in Nebraska, including its status, completion date, costs, and other aspects.

Mr. Duvall. Alternative plans addressing the problems, needs, and concerns of the area are being formulated. Considerable new data relating to the Platte River endangered species and migratory bird issues were cooperatively obtained with the Fish and Wildlife Servce and other interested wildlife interests. These data are in the final analysis and are being incorporated into alternative plans. Plan formulation will be completed this year and it is anticipated that a preferred plan will be identified. The preferred plan will be refined and a planning report/draft environmental statement completed in fiscal year 1987.

The total estimated cost of the study is $1,894,628.

GROUNDWATER RECHARGE DEMONSTRATION PROGRAM

Mrs. Smith. Please provide a discussion for the record of the Bureau's efforts to select 21 sites for pilot projects for the artificial groundwater recharge project.

Mr. Duvall. The following events have occurred in the implementation of the Groundwater Recharge Demonstration Program:

1. A workshop, to introduce State representatives and staff from the Bureau of Reclamation, the U.S. Geological Survey, and the Environmental Protection Agency to the concepts and strategies of the program, was developed and conducted in October 1985.
2. A Notice of Initiation for the program, indicating a December 2, 1985, start-up for Phase I, was transmitted by the Commissioner to the Regional Directors. This information has been supplemented by the Regional Directors and transmitted throughout the 17 Western States.
3. A memorandum of understanding to transfer funds to the U.S. Geological Survey for its participation in Phase I ($125,000 for the 2 years) was finalized on February 6, 1986.
4. Additional information requested by the States on the proposal development portion of Phase I, a non-Federal activity, was prepared and transmitted.
5. A six-person interagency committee (Bureau of Reclamation, U.S. Geological Survey, Environmental Protection Agency) has met to develop and provide policy guidance in areas of mutual concern among the three agencies. This group will meet as necessary throughout the course of the groundwater recharge demonstration program.
6. Currently, States and other non-Federal entities are preparing site nomination proposals to be submitted to the Bureau by the Governors of each of the 17 Reclamation States.

Mrs. Smith. What are the site-selection criteria?

Mr. Duvall. The Bureau has not developed specific site-selection criteria for this program. Evaluation information has been developed, based primarily on Section 3(a) of P.L. 98-434, the authorizing legislation. On January 9, 1986, the Bureau provided to the Governors' designated recharge program representatives and other interested parties, information on the evaluation and ranking process. I have made that same information available for the record.

(the information follows:)

GROUNDWATER RECHARGE DEMONSTRATION PROGRAM

EVALUATION AND RANKING PROCESS

I. Initial Screening Criteria and Questions (A "no" answer to any of these criteria or questions would result in no further evaluation of that proposal.)

A. Meets P.L. 98-434 requirements

1. Identifies an available surface water supply.
2. In areas of declining water table.
3. Commits to a minimum of 20 percent non-Federal cost sharing.

B. Other Critical questions

1. Is there public acceptability of proposal?
2. Is there a lack of serious environmental problems?

C. Has a priority for the proposal been provided by the Governor of the State proposal is located in?

If a "yes" or positive response can be given for each point in Category I, Then the proposal will move to the evaluation and analysis phase of Category II.

II. Evaluation and Analysis (Each proposal will be reviewed with a focus upon 11 factors of special interest. These 11 factors are categorized into 2 groupings.)

A. Grouping No. 1

1. Has engineering "feasibility" been addressed?
2. Has geohydrologic "feasibility" been addressed?
3. Has the cost estimate and its component parts (contigency, overhead, etc.) been prepared?
4. Has the issue of legal access to the demonstration site been addressed?
5. Is there an adequate monitoring plan?
6. Is there a plan to rehabilitate--the- site after the demonstration is concluded?

The above grouping of factors would be used to guide an analysis of the proposals by the regional offices of BR (Bureau of Reclamation), the district offices of the USGS (U.S. Geological Survey) and as necessary and appropriate, the regional offices of the EPA (Environmental Protection Agency). The USGS will pay particular attention to factors 2 and 5; when necessary, EPA would provide an evaluation of water quality monitoring aspects. Results of these analyses would be provided to the appropriate BR regional office. A numerical score (from 0 to 60) will be assigned by the BR regional office to each proposal, based on the analysis of the six factors. A higher score means a greater likelihood that the demonstration project could be constructed, operated and monitored from a "technical" perspective.

B. Grouping No. 2

1. Details of the cost sharing proposal.
2. Total Federal cost of construction proposal related to total Federal dollars available for Phase II demonstration.
3. Attention to legal and institutional issues.
4. Attention to environmental aspects.
5. The "uniqueness" of the proposal.

The above five factors will be evaluated by the reviewers. A numerical score (from 0 to 40) will be assigned by the BR regional office to each proposal. The sum of the scores for the two groupings will provide a total score for each proposal.

III. Summary Information (To Be Done by Reviewers)

A. Prepare a brief statement on the strengths of the proposal.

B. Prepare a brief statement on the weaknesses of the proposal.

IV. Ranking (Based upon the above evaluation and analysis process, provide a ranking for proposals by State for each BR region. This ranking will be a part of the BR Regional Director's findings and recommendations for Phase II of the program.)

PROJECTS AND COST CEILINGS
(in thousands of dollars)

	Original Authorized Ceiling	Indexed Ceiling	Appropriation To Date	Balance to Complete	Current Total Estimated Cost
Auburn-Folsom South Unit, Central Valley Project	425,000	1,404,205	339,634	1,754,314	2,093,948
Oroville-Tonasket Unit, Chief Joseph Dam Projec	39,370	70,855	66,891	11,109	78,000
Title II Division, CRBSCP	125,100	290,214	76,258	380,762	457,020
Garrison Diversion Unit, P-SMBP	207,000	1,058,133	267,246	1,134,947	1,402,193 1/
North Loup Division, P-SMBP	79,500	205,520	179,838	171,072	350,910
Colorado River Storage Project	1,370,000	2,188,060	1,521,613	1,317,691	2,839,304
Washoe Project	52,000	190,624	41,355	315,000	356,455
O'Neill Unit, P-SMBP	see footnote 2/				
San Luis Unit, Distribution and Drainage Facilities, CVP	192,650	242,001	254,401	724,560	978,961

1/ Represents the current total estimated cost of the originally authorized Garrison Diversion Unit. Total estimated cost of the plan recommended by the Garrison Commission is $1,410,896.

2/ Work on the O'Neill project, as authorized by P.L.92-514, has ceased because of a decision to switch to a groundwater recharge recovery concept. A new appropriation ceiling will be established in the amended legislation.

GROUNDWATER RECHARGE DEMONSTRATION PROGRAM

OUTLINE FOR PREPARING SITE PROPOSAL SUMMARY INFORMATION

NOTE: All items should be complete with information taken from the site nomination proposal. If the item cannot be completed because information is not available, so indicate with a NA, (not available). If the item is not applicable to the proposal, indicate with a DNA, (does not apply). To be used by USBR.

1. Site Name:

2. Site Location Map Showing Facilities:

3. State Ranking:

4. Project Description (What is being proposed, why it is being done, how it will be accomplished, what problems might be anticipated, etc.)
   Statement of purpose:
   Previous investigations:
   Aquifer use and development in vicinity of project:
   Recharge techniques:
   Operation scheme:
   Potential long term use of water:
   Ability for expansion:
   Applicability of technique to other areas:
   Integration with existing projects:

5. Proposed by
   Name of agency:
   Legal authority to participate:
   Cost sharing commitment:
   Cost sharing proposal:
   Contractual arrangements:

6. Contacts and Coordination (Who would be involved and what interaction linkages are proposed?)
   - USBR:
   - USGS:
   - EPA:
   - State:
   - Local:
   - Other (Specify):

7. Facilities Proposed (Briefly describe and show on map.)
   - Description of the project site:
   - Diversion structures:
   - Conveyance structures:
   - Storage structures:
   - Recharge basins:
   - Recharge wells:
   - Monitoring wells:
   - Withdrawal facilities:
   - Treatment facilities:
   - Use of existing facilities:
   - Other (Be specific):

8. Water for Artificial Recharge
   - Bibliography of data:
   - Data abstract or summary:
   - Source of water:
   - Quantity available:
   - Frequency of availability:
   - Quality (biology, chemistry, sediment) parameters:
   - Treatment requirements:
   - Rights and permits:

9. Hydrogeologic Conditions (A principle area of USGS involvement in the evaluations.)
   Bibliography of data:
   Data abstract or summary:
   Water table situation:
   Type of receiving aquifer:
   Depth to aquifer:
   Aquifer characteristics/materials:
   Unsaturated zone material:
   Aquifer water quality:
   Aquifer storage potential:
   Rate of drawdown:

10. Recharge Monitoring Program
    What will be measured:
    How measured:
    Quantity, rate movement parameters:
    Biological, chemical, sediment parameters:
    How reported:
    Influences/conditions impacting monitoring:
    Responsibility for funding:
    Responsibility for accomplishment:
    Responsibility for reporting:

11. Access to Site
    Surface owner:
    Physical accessibility:
    Access authority:
    Construction authority:
    Rehabilitation responsibility:

12. Other Potential Concerns and Issues:
    - Physical:
    - Environmental:
    - Legal/Institutional:
    - Public Acceptability:
    - Risks and Uncertainties:
    - Other (be specific):

13. Estimated Cost (Criteria for overhead, contingency, level of detail, price level base year to be provided.)
    - Study cost:
    - Construction cost:
    - Operational cost:
    - Monitoring cost:
    - Rehabilitation cost:
    - Total Federal cost:
    - Total Non-Federal cost:

14. Phase II Activity Schedule (Responsibility and timing.)
    - Plan of Study:
    - Design and specifications for work:
    - Preconstruction activities and obtaining permits:
    - Construction period:
    - Monitoring period:
    - Status reports:
    - Final report due:

15. USBR Regional Ranking (This will be determined after BR region and USGS evaluates all proposals and compiles them by State.)

Mrs. Smith. How can our interested Nebraska Water authorities get their locales' names in the hat?

Mr. Duvall. Nebraska water authorities and other entities interested in participating in the program should contact:

J. Michael Jess
Director
Department of Water Resources
Box 94676
Lincoln, NB 68509-4676

COST SHARING

Mrs. Smith. On cost sharing, how much up-front money are you planning to require on new studies and on new construction, such as for the Prairie Bend Project in Nebraska? Have any up-front cost-sharing agreements been signed for new studies or for new construction? Please provide a list of studies and construction for which up-front cost sharing has been agreed to and showing amounts of up-front money for each compared to the total cost of each.

Mr. Duvall. On all plan formulation studies, such as the Prairie Bend Project, we are now requiring non-Federal contribution, either in cash or in-kind services, of 50 percent of the cost unless a Secretarial waiver is granted.

On new construction, up-front monies to be provided by non-Federal partners will be negotiated, on a case-by-case basis, under the general policy guidance provided by the letter from President Reagan to Senator Laxalt and subject to the Federal fiscal situation. Projects such as Prairie Bend will be subject to up-front financing.

At this moment, there are several up-front financing negotiations in progress. Buffalo Bill in Wyoming is the only project for which negotiations are complete. Based on current construction costs, it is estimated that the State will finance about 40 percent. This percentage was slightly higher at the conclusion of negotiations when estimated construction costs were lower. Also, 40 percent does not include the present value of beneficiary capital repayment.

Varying amounts of non-Federal cost sharing on Reclamation planning studies is being contributed. A list of the new planning starts which have non-Federal cost sharing is provided.

(The information follows:)

Up-Front Cost Sharing on USBR General Investigations

Name	State	Study Cost	Non-Federal Cash	Non-Federal Inkind	Percent Cost-shared
Deschutes River Basin Water Salvage Project	OR	$ 580,000	0	290,000	50%
Upper Snake River Basin Storage Optimization	ID	$ 460,000	0	230,000	50%
San Bernardino Valley Ground Water Project	CA	$1,000,000	350,000	150,000	50%
South Platte River Operations Study	CO	$ 630,000	0	315,000	50%

Mr. BEVILL. The Chair recognizes Mrs. Boggs.

MRS. BOGGS' REMARKS

Mrs. BOGGS. Thank you, Mr. Chairman.

Welcome to all of you—Mr. Secretary and those of you who have been appearing before us for the first time.

I was very pleased, Commissioner Duvall, with your very cogent explanation of what your area of responsibility is all about. And that is a need that is constant for the well-being of us all—an adequate supply of good-quality water. And the way to achieve that adequate supply is through responsible management of our available water supplies, and the developing of additional water resources to meet the needs of future generations. I think that says it all.

In reading the testimony of all of you I feel that you have tried to answer that charge very responsibly, and I appreciate everything that you have done.

Chairman Whitten referred to the United States, and the united effort of all of us. And certainly, Mr. Secretary, you have demonstrated a willingness to bring all of the States together in various situations. Since you are here, I have to ask you some questions that have to do with my section of the country.

NEGOTIATIONS ON OCS LEASING

Could you please bring us up to date on the activities of the Ad Hoc negotiations on California OCS leasing and how you would assess what is going on?

Mr. HODEL. We have had a series of meetings with members of Congress and their staffs who had been designated by the Congress when the decision was made last Fall not to extend a moratorium.

The first couple of meetings dealt, to a substantial extent, with the question of how we should proceed, which is frankly, I think, maybe the most important thing.

That was accomplished and we have had, since that time, one additional meeting at which the representative of the Department of the Interior presented the information and the material which we have available to us as to what we think the prospects are and what we think the problems are off the coast. There are additional meetings scheduled at which representatives of environmental groups and industry will have an opportunity to present their views on the entire coastline which has been under moratorium.

Our target is to try to reach agreement by, let's say, very roughly, the end of May. The reason for that, frankly, is that if we are successful, it will permit us to feed the material into the five-year plan which we currently have under review and which will be presented to Congress early next year, we hope.

If, on the other hand, we are unsuccessful in reaching sufficient agreement to persuade members of Congress that they should not renew their efforts for a moratorium, by reaching that conclusion by the end of May, we give them an opportunity to renew their request to the Congress. So I think, in fairness to them, our conclusion has been that we need to try to bring this to a head by the end of May.

At this point it would be preliminary to predict how that will all come out. But I think it is encouraging that we are talking, that we are getting information of a factual nature before the entire group, and that we have a chance to talk about some of the alternatives that may be available to avoid the moratorium issue.

SECTION 8(g)

Mrs. **Boggs**. I see. Can you tell me what the Administration's current position regarding the resolution of the Section 8(g) issue is? I understand the House and Senate conference on the reconciliation bill are close to an agreement.

Mr. **Hodel**. Yes.

Mrs. **Boggs**. And if that agreement is reached that generally follows the one that is under discussion, what will the Reagan Administration's position be?

Mr. **Hodel**. I probably cannot positively identify what the Administration's position will be. I can assure you what my recommendations to the Administration are.

It is my understanding that several provisions which we have felt are unacceptable because of their significant impact on the OCS Program should be removed. If they are not removed, I would be in a position of recommending a veto. Those are three provisions which I understand the Senate is very close to excluding, which would eliminate that area of concern. Those are the Buy America provision, the Section 19 amendments, and the revenue sharing proposal that was attached to the original reconciliation bill coming out of the House.

The 8(g) sharing of funds is a matter, I think, which is in active discussion at the present time. I should emphasize that the Departmental budget assumptions were based on our position in court. I have had to emphasize that particularly with all of you who represent the State of Louisiana. That does not represent a new position on the part of the Administration, nor a final position, but for purposes of budget preparation I assumed that our position in court would be successful because the budget had to present some figure. Any other figure would have undercut our position in the court and was not appropriate.

We still are hoping that something along the lines of what was agreed to previously on the fund distribution, the 27 percent figure, could be agreed upon. It is my understanding that people are getting very close on that also.

Mrs. **Boggs**. Thank you very much.

Mr. **Bevill**. Would you yield on that?

Mrs. **Boggs**. Certainly.

Mr. **Bevill**. The 27 percent, as I recall, is for the States.

Mr. **Hodel**. Yes. That is correct.

Mr. **Bevill**. I believe our friend and colleague, Congressman Huckaby, offered an amendment that would give another priority to the coastal areas, but that amendment was defeated, so that is out, I assume.

Mr. **Hodel**. I don't know.

Mr. **Bevill**. You're not familiar with that?

Mr. **Hodel**. I'm not familiar with that aspect of it.

Mr. **Bevill**. All right. Thank you.

Mr. **Hodel**. What happened is that the original agreement that David Stockman entered into was part of broader budget negotiations. There's a very large pot, over $6 billion, that we have collected and put in escrow, pending resolution of the issue of how much should be shared with the States under the statute which calls for fair and equitable distribution of monies arising out of common pools. Well, we've left that position because we tried to reach a settlement. Secretary Clark, my predecessor, obtained approval from the Administration to offer 16⅔ percent. David Stockman agreed that we would support a 27 percent figure.

Our calculation was that that 27 percent would be about $485 million for the State of Louisiana and $375 for California and Texas, the other two largest States involved.

Then, as the process continued, I believe, on the Reconciliation Bill, the pot to which the 27 percent would be applied was expanded, until, ultimately, it was in the $800 million range. It became an $800 or $900 million item, depending on what discount rate you use, which became a very serious concern to the Administration. When coupled with the other three items I have previously mentioned, it became a proposal on which we felt comfortable recommending a veto.

With the other items now likely to be removed, there is an effort to come up with a figure with which we all can live and to resolve the dispute once and for all, which is where I would like to come out.

But, ultimately, I have to acknowledge that, on financing questions of this type, the OMB weighs more heavily than the Department of the Interior.

Mr. **Bevill**. That is unfortunate.

Mr. **Hodel**. Perhaps in this case it may be fortunate, Mr. Chairman, but I appreciate your sentiment very much.

Mrs. **Boggs**. We could use every penny we can get. Right?

Mr. **Bevill**. I hear from my Governor about every other week on that.

We will place the following letter from Secretary Hodel in the record at this point.

[The letter follows:]

THE SECRETARY OF THE INTERIOR
WASHINGTON

March 13, 1986

Honorable Lindy Boggs
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Mrs. Boggs:

After reviewing the transcript of my testimony of March 4 before the House Energy and Water Development Appropriations Subcommittee, I believe it may be helpful to clarify the record concerning the consultations on California OCS leasing. In responding to your request for a status report and assessment of the ad hoc negotiations on California OCS leasing, I commented to the effect that we will attempt to conclude the negotiations by the end of May so that, if a consensus cannot be achieved, those Members who desire to do so will have an opportunity to pursue a legislative moratorium on OCS development on offshore portions of the California coast. In no circumstances should that comment be construed as indicating any support for a leasing moratorium. The Administration has not changed its position on this important matter.

We believe that Sections 18 and 19 of the Outer Continental Shelf Lands Act presently provide appropriate and adequate consultation for State and local interests. The additional negotiations imposed by P.L. 99-190 to resolve the California OCS leasing acreage were brought about as a result of the protracted moratoria that have existed for the past four years.

It is our sincere hope that these negotiations and the normal consultation process of Sections 18 and 19 of the Outer Continental Shelf Lands Act are providing means for resolving this longstanding contentious issue. This process presents a more rational alternative to the blanket moratoria which result in the blindfolding of America. I cannot foresee any circumstances in which the Administration would accept, much less support, moratoria.

Thank you for calling this matter to my attention. I hope this clarifies my response to your question at the hearing and that you will enter a copy of this letter in the hearing record.

Sincerely,

Don

DONALD PAUL HODEL

JEAN LAFITTE NATIONAL PARK

Mrs. BOGGS. Mr. Secretary, you'll be happy to know that the Jean Lafitte National Park has continued to have the same volume of visitors that we assumed were coming just for the excitement of the World's Fair. And, for the record, could you please give us a status report on the Jean Lafitte National Historic Park.

Mr. HODEL. We will do that.

[The information follows:]9

JEAN LAFITTE NATIONAL HISTORICAL PARK, LA

Jean Lafitte National Historical Park was established by Public Law 95-625 on November 10, 1978, in order to preserve for future generations significant examples of natural and historical resources of the Mississippi River Delta Region, and to portray the development of cultural diversity in the Region.

The park is comprised of three administrative units and the park headquarters.

Headquarters is located in the City of New Orleans with office space in the U.S. Customs House at 423 Canal Street.

The French Quarter Unit of Jean Lafitte National Historical Park serves as an introduction to the historical and cultural diversity of the Delta. The unit features exhibits describing some of the many cultural groups who live in the Region, their history, and their contributions. Walking tours lasting approximately 1½ hours leave the unit on a regular basis throughout the day.

The Barataria Unit was established to preserve and maintain important areas of the coastal marsh wetlands. It consists of natural bayous, freshwater marshes, live oaks, Spanish moss, water birds, alligators, songbirds, and much more. It is located on the West Bank of the Mississippi in Jefferson Parish. The park has developed two self-guided hiking trails, the Coquille and the Ring Levee, and one canoe trail for the enjoyment of the visitor.

The Chalmette Unit, created in 1939, preserves the site of the Battle of New Orleans. Prior to being a unit of Jean Lafitte National Historical Park, it was Chalmette National Historical Park. Located in St. Bernard Parish, 6 miles down river from the French Quarter, it contains 141 acres including the battlefield and Chalmette National Cemetery. The visitor center is located in the Beauregard House, featuring museum exhibits and an audiovisual program explaining the importance of Louisiana and the Battle of New Orleans in the War of 1812.

OPERATING BUDGET AND VISITATION

The park's operational budget in 1985 was $1,416,100 with fiscal 1986 budget at $1,544,600. In fiscal 1986, an add-on of $157,000 was provided for operating an informational counter, staffing visitor centers at Barataria/Chalmette, as well as maintenance needs parkwide. There is no increase requested in the fiscal 1987 budget. At the present time, there are 50 employees on board, with peak employment to reach around 56 employees, or approximately 48 workyears.

Visitation recorded in 1984 was 849,010 (World's Fair). For 1985, visitation reached 713,860.

PLANNING, CONSTRUCTION AND LAND ACQUISITION

The General Management Plan, Resources Management Plan and Interpretive Prospectus for the park were completed in 1982. The Delta Region Preservation Commission participated in the preparation of the General Management Plan and has served effectively as a citizen's advisory group, a sounding board and a fountainhead of popular grassroots support for the park.

In fiscal 1983, $2,171,000 was appropriated for construction. All of these funds were used for the construction of the Cotton Patch Visitor Center in the Barataria Unit, now nearing completion. In fiscal 1984, a congressional add-on of $1,046,000 was made available. This is being used to construct a new visitor center at the Chalmette Unit and to provide interpretive media at all the units, including the two new visitor centers. In fiscal 1985, $421,000 was again appropriated for construction. This funding has been used to provide trails and trail bridges in the Barataria Unit. In addition, $98,000 was appropriated specifically to provide a seawall for historic Fort Proctor; this was accomplished by St. Bernard Parish. In 1986, Congress appropriated $558,000 to provide exhibits and audiovisual facilities at Chalmette and Barataria and $249,000 to design an Acadian Cultural Center at Eunice, Louisiana (these amounts were subsequently reduced to $534,000 and $238,000, respectively, by the provisions of the Budget Deficit Reduction Act). These funds were included in a proposed rescission submitted to Congress with the 1987 budget. No construction funding for Jean Lafitte is proposed in the 1987 budget.

The act of November 10, 1978, authorized the appropriation of $50 million for land acquisition. To date, $21,779,430 has been appropriated. Acreage acquired to date is 6,809.27. Currently, there is $4,770,523 available to continue land acquisition. These funds are adequate to acquire land in the Barataria Unit, south of Millauidon Canal. Unappropriated limitation is $28,220,570.

WOMEN AND MINORITIES

Mrs. **Boggs**. And could you please bring us up to date on the department's efforts to hire and promote qualified women and minorities for managerial and technical responsibility? Particularly in the mid-grades. And what are your personal plans to attempt to include this effort?

Mr. **Hodel**. I will, if I may, submit that for the record in some detail. The general figures indicate that there has been a slight increase in the number of women employees and, incidentally, in minority business contracts which the Department has undertaken.

I will give you a detailed analysis. As I have said to you in the past, it is my desire to keep pressure on the Department to emphasize that we need to seek and hire qualified people. As you know, and I know this is not what you are suggesting, I don't think it is appropriate to set a goal or a quota, but I think it is important to emphasize that we can and should continue to seek out qualified women and minority employees. I believe that there is an earnest effort on the part of our Bureau directors to do that.

Mrs. **Boggs**. I would look forward to having the information in the record. Thank you very much.

Mr. **Hodel**. Thank you.

[The information follows:]

Employment of Women and Minorities

Each of the bureaus in the Department of the Interior is required under the Civil Service Reform Act, P.L. 95-454 to develop a comprehensive Federal Equal Opportunity Recruitment Program Plan (FEORP). Recruitment strategies and methodologies are developed to increase representation of minoritiies and women in occupations that have been identified as underrrepresented. When employment opportunities become available recruitment strategies are developed to attract women and minority candidates for vacancies in the Department of the Interior.

As of January 31, 1986, women represented 36 percent of the total work force and minorities represented 28 percent. In the General Schedule, women represented 11.3 percent of the GS-13 positions, 8 percent of the GS-14's and 5 percent of GS-15's. Minorities represented 11 percent of the GS-13 positions, 11 percent at the GS-14 level and 7 percent at the GS-15 level. These figures represent 2.7 percent of the total work force or 1,577 women and minorities at GS-13, 14, and 15 in the Department of the Interior.

Mrs. **Boggs**. Thank you, Mr. Chairman.

Mr. **Bevill**. The Chair recognizes Mr. Myers.

Mr. **Myers**. Thank you, Mr. Chairman.

To the Secretary and the new Commissioner, welcome to the committee. The Secretary is an old pro around here. He's worn different hats before this committee. I think this is about the third or fourth hat you have worn, isn't it? So he's quite at ease here.

Mr. **Bevill**. He is at home.

Mr. **Myers**. Yes. It is just like coming back home.

COST SHARING

Costsharing is something that has been kicked around here for several years—talked about, and very little done about.

I, for one, support cost-sharing if it is reasonable. I think that it is better than no building at all. And I see the choice today—and for the last number of years—of no construction, no new starts, unless we have some cost-sharing. If that's what it takes to get off-center and start rebuilding America, as Chairman Whitten speaks often about, I am willing to bite that bullet and help do that.

Last year the House passed legislation providing for cost-sharing in the Corps of Engineers projects and set into law the provisions of what would be required of local governments.

I can see where there would be some advantage to negotiate, but does the department have guidelines or a formula that you negotiate with local interests about what proportion they should have to pay? How do you negotiate this? How do you stay out of trouble?

Mr. **Hodel**. Before I ask Mr. Broadbent to answer that, let me say we don't stay out of trouble. That is part of our problem, but I don't know that it is entirely related to the having or not having guidelines on cost-sharing negotiations. We seem to have almost an unlimited capacity in the Department to have controversy right within the Department. We don't have to step outside with all the varied interests.

Mr. **Myers**. Well, you don't have sole domain on this. We have our share in Congress, too.

Mr. **Hodel**. Mr. Broadbent should really respond.

Mr. **Broadbent**. Well, we have three or four parts to cost-sharing as we look at it in the Bureau of Reclamation. I think you might look at the Bureau as being a little bit different than the Corps. The Corps has some 400 or 500 projects authorized. A lot of projects authorized and ready for construction. That isn't true of the Bureau of Reclamation, which probably has four or five projects which in the next year or two might be ready for construction as new starts. We don't have the large volume that the Corps has.

Now, some of our starts are very big. They could take a lot of negotiations and work. But that isn't the same as in the Corps. And so when you look at the Corps bill which has a fixed percentage for cost sharing, it is a little bit different than the circumstances that are before the Bureau of Reclamation.

The Bureau of Reclamation in many cases, also has the additional responsibility of building projects which involve Indian water rights or Indian reserve water rights, and those issues require that you look at the Indians' ability to pay, as well as the trust responsibility, which the Secretary carries.

It means that you have to be a little more flexible.

Mr. **Myers**. We recognize that.

Mr. **Broadbent**. That's really the case in Animas-La Plata, which the Secretary spoke about before. We have really used as our guideline for negotiations of cost-sharing the letter that was sent by the President to Senator Laxalt which says that we would look at cost-sharing on a case-by-case basis. Where there is a vendable product, like power and M & I water supply, in general we ask for full reimbursement allowed by law at current interest rates, which is the same as all up-front, or it can be up-front.

As I say, we don't have that many. We are now getting 50/50 on all new planning starts and are having no trouble negotiating those kinds of agreements. Except for planning starts, we are in active negotiations on cost-sharing on only one or two construction projects, and they are on a case-by-case basis.

Mr. **Myers**. We recognize that most of yours are individually authorized by Congress rather than the situation we usually have in the Corps. Yet, if you only had two, and you charge one a higher local percentage or cost-sharing than the second one, I don't know how in the world——

Mr. **Broadbent**. We had three, really—we had four authorized.

Mr. **Myers**. Well I'm just saying that as an example. If you don't charge exactly the same and require the same local contribution, how can you avoid not having massive——

Mr. **Broadbent**. One of them was an Indian Project—Headgate Rock Hydroelectric Project. It involves adding a powerplant to the existing dam. That facility is fully reimbursed by the government as a trust responsibility to the Indians along the Colorado River who are the recipients of the power.

Mr. **Myers**. Colorado River Indians along the Colorado River, who are the recipients of that.

Mr. **Broadbent**. The other one is Hoover. There has never been any question about Hoover being fully reimbursed. It was a matter of whether the money was going to be up-front or repaid over time with full interest.

The up-front cost sharing at Hoover is for the uprating of the generators, which adds about 550 megawatts to the capacity of the Hoover Dam powerplant. The people who are going to use that power are going to pay for it and they are very happy to do so.

In the case of Buffalo Bill Dam modification, Buffalo Bill is an old dam, which has extensive rehabilitation needed on it. The project is adding a powerplant and some water supply. We negotiated an agreement there that provided for $47 million out of $120 million, up-front, from the State of Wyoming. At the time we negotiated it we thought it was a very good agreement and still think so.

Part of it is really set by the attitude of Congress. For instance, we have cost-sharing on dam safety set by an act that was passed by the Congress, and we have cost sharing on the Non-Indian Irrigation portion of the Central Arizona Project, which is 20 percent as set by Congress.

We are trying to stay a little bit flexible.

Mr. **Hodel**. If I could hazard a follow-on to that. I think as we sit here I would have the same concern and question you have: how can you have 25 percent with one group, 35 percent with another? If there is that kind of a variation, isn't that going to lead to bitter complaints? It probably will within the context of negotiations. I think what we encounter is that every one of these projects has very unique elements in it. Some have Indian water rights problems, others do not. Some have dam safety, which has a fixed cost-share percentage. Some have power benefits. There are near-term and long-term irrigation benefits.

In the case of the Central Arizona Project, which didn't have up-front cost-sharing contemplated when the Government started construction on that project, we've sought cost-sharing primarily as a means of trying to complete the project in some reasonable way. We have really restructured it. There were complaints from Arizona about being called upon to provide up-front financing on a project where it was never considered in the first place, but, ultimately, they have come up with what appears to be a very sizable contribution.

Now I think what Bob is saying, and what I understand, is that these differences actually do give us flexibility to sit down and what is probably a better and more reasonable arrangement for both sides than if we had a mandated flat rate, which is somehow going to be deemed fair. It is fair if everybody's equally situated. It is not fair if they are not so situated, and the one thing we are sure of is that they are not.

Mr. MYERS. The flexibility—I can see the tremendous advantage on both parties, both on the builder, potential builder, as well as you. But the issue of equity or fairness is what concerns me somewhat.

Mr. WATKINS. Amen.

Mr. MYERS. You mentioned ability to pay. Now in business we used to have a rule of thumb: you charge as much as you can.

Mr. HODEL. What the traffic will bear.

Mr. MYERS. That's right. Is that what you are saying here: You negotiate on that basis?

Mr. BROADBENT. I don't think so. I think clearly the State of Wyoming could have come up with a lot more money because at that time they had a lot of oil revenues, and that was before the price of oil went down. Clearly that wasn't their ability to pay. I think that is the case of a lot of these agreements.

I think what we are trying to do is to do something that is fair and equitable to all parties. In some cases there are some states or entities that do not have the ability to up-front as much as others, and I think we have to take that into consideration.

Mr. BEVILL. We are going to hear that before you get out of here, I'm sure.

Mr. FAZIO. Would you yield?

I want to ask about the other project you didn't mention, at least as fully as the other three. And that is Animas-La Plata. I know it was touched on earlier, but there you have an Indian issue. You've got claims that are outstanding. The Utes and Mountain Utes have claims against the Federal Government, and it seems to me that you are asking for a very high local cost-share percentage—close to 50 percent.

Mr. HODEL. One of the problems, I think, is the cost/benefit ratio on that project. In looking at the cost/benefit ratio of the project as I understand it, and I have people on both sides of me who are much closer to it than I am, one of the things we are considering is to ensure that the portion we are putting in represents a fair return, taking into account our obligations to the Indians.

One of the things we have looked at is, what is the alternative to Animas-La Plata if we do not build it? In terms of litigation, what are our long-term liabilities?

Mr. MYERS. Litigation also—the problem between the Indians—responsibility to the Indians——

Mr. FAZIO. Right. And it could be up to $100 million, I hear, that we would have to pay just to settle claims.

Mr. HODEL. It is one of the things we have to look at. It could be more; nobody really knows. Things we consider are: you risk $100 million if you do not proceed or you commit to $600 million or $550 million if you do proceed, then how much up-front financing makes sense? I don't think you have enough facts in what I have just posed to answer the question. It requires a negotiation process.

COST SHARING ON ANIMAS-LA PLATA

Mr. MYERS. Well, Animas-La Plata has been around here about as long as some of the members here have been. It has been kicked around. For a while it was an environmental issue. I think we have got that pretty well resolved, haven't we? Then the Indian water rights. Now the cost-sharing—local cost-sharing. You say it is under negotiation now, and you say you are close to an agreement with the State. I believe you hope to have an agreement.

And you mentioned earlier that the $200 to $300 million local cost sharing—that is a big wide gap there, $200 to $300. What percentages would that be?

Mr. HODEL. Well, it depends on which cost estimate you use. Using the figures we had when the $200 to $300 million came up it ranged from 30 to 45 percent. Now, with the reduced cost estimate on the project having been changed because construction costs have gone down, it is in the neighborhood of probably 40 to 60 percent.

Mr. MYERS. You mean you didn't reduce the amount, percentage-wise, that the local government has to put in?

Mr. HODEL. Not yet.

Mr. FAZIO. They took it all—the Federal government?

Mr. MYERS. The Federal took all of it.

Mr. HODEL. Well, your conclusions will have to be tempered partly by how much confidence you have in the cost estimates. Certainly this Committee has been exposed, as I have, to essentially an unending stream of cost estimates which may have been at one level when the project was approved but appear to be totally different when the project is being completed.

If we could build Animas-La Plata starting from the initial construction starting date to completion, in an orderly and efficient fashion, we could probably meet those cost estimates. They are based on the expectation that we can do that. The reality is, however, that I don't know any projects we have that will go through in that way.

Mr. MYERS. What brought about the cost reduction, then.

Mr. HODEL. We have a revised estimate for what it would cost to build today. We have seen significantly reduced prices in construction costs as a result in the change in the economy.

Mr. MYERS. With the contracts signed now you could pretty much do that, couldn't you?

Mr. HODEL. If you let the contracts right now, and if you could complete the contracts on a reasonable schedule, you could match the estimate. However, that means you are not going to be delayed because of lawsuits over your contract, over your EIS and the like. That has not been our pattern.

Mr. DUVALL. Perhaps it might be somewhat misleading to suggest that the construction costs have actually gone down that much. The project, as envisioned in its early stages, was priced by engineers, and then each year it is adjusted by the economic index assumptions for inflation during the period of time that it was under discussion. Now that we are up to the point where we were expecting perhaps a best and final offer from the States on cost sharing, our engineers went back and repriced the project. The reduction in estimated costs really reflected a difference in the inflation and the economic assumptions used to reprice the project versus indexing each year. Thus, the updated estimated costs yielded somewhat different numbers.

I share the Secretary's feeling, though, on being nervous about the estimate.

Mr. MYERS. While we are on the subject of negotiating, it seems to me that in fairness you would want to pass on part of that savings on to the local interests who have to come up with the cost-sharing. I can't imagine the government taking all of that—the Federal government. It seems like it is only fair to pass on the savings—if you are ever going to get it built.

Mr. HODEL. That may well happen.

Mr. DUVALL. You have to understand that the States are in a process of coming in with an offer, and we gave them this new number and we have not had their reaction.

Mr. MYERS. Are you coming forward to ask for construction authority? The cost sharing—Indian water rights—hasn't that been pretty well settled?

Mr. HODEL. We have, in fact, proposed to go forward with the project with the $1 million contingent upon reaching an agreement. My understanding is that our request represents a commitment to try to fund the project if we can reach a satisfactory cost-sharing agreement.

Mr. MYERS. How many more do you have like that? Other projects that are just ready to move forward some time?

Mr. HODEL. That are on the brink?

Mr. DUVALL. Half a dozen.

Mr. MYERS. Half a dozen? Somebody's going to have to establish a priority. Which one goes first? We can't start all in the same year, financially or——

Mr. HODEL. No, we have to be conscious of the out year funding requirements, because it makes no sense for us to put in a few million dollars. It doesn't seem like a lot of money in this budget, but it is still a lot of money. A lot of taxpayers have to be tapped hard to raise a million dollars.

Mr. MYERS. Is Animas-La Plata the biggest one that you have so far that you have mentioned—in dollars?

Mr. BROADBENT. There are some others that are bigger, but they are questionable. I mean, we've got an Auburn Dam or something like that.

Thank you. I have some other questions I will provide for the record, but, thank you for your testimony.

[The questions and answers follow:]

GARRISON DIVERSION UNIT - STATUS/WORK PLANS

Mr. Myers. Could you explain for the Committee where we stand with the GDU? Will funds in 1987 complete work on Garrison? Does your plan conform to the Garrison Commission's recommendations?

Mr. Duvall. The following quote is from a February 27, 1986, letter signed by Dick Cheney, Ranking Republican, Subcommittee on Water and Power Resources and George Miller, Chairman, Subcommittee on Water and Power Resources:

> "...Negotiations which may lead to reauthorization of the Garrison project are continuing. While we cannot guarantee passage of a bill before the March 31 statutory deadline for funding in this current fiscal year, we are encouraged by discussions which have taken place among the involved parties. It is still quite possible that agreement may be reached which would allow us to proceed with legislation."

As of March 5, 1986, such negotiations still appear headed toward settlement.

The $18 million requested for FY 1987 assumed reformulation legislation would not pass and was intended to complete ongoing construction and put the project in a "site safe" condition that would protect the Federal investment. However, since the budget was transmitted to Congress we have decided to terminate construction of Reach 1A of the New Rockford Canal and the Oakes Distribution System if passage of reformulation legislation looks bleak on March 31, 1986.

The final work plan for fiscal year 1987 depends on what happens regarding passage of reformulation legislation. Our work plan will be responsive to any enacted reformulation legislation. A termination study would be completed by mid-June 1986 if the legislation does not pass. This study would inventory completed and partially completed facilities and assess requirements and impacts of either their preservation or disposition. The study results are expected to evaluate funding and staffing requirements for fiscal year 1987 and beyond.

COLORADO RIVER BASIN SALINITY CONTROL ACT

Mr. Myers. A few years ago we learned about a privately developed project, Aquatrain, that was to ship pulverized coal from Colorado to the West Coast using saline water from Colorado as a transport medium in the pipeline. What is the status of this project? Would it help control Colorado River Salinity?

Mr. Duvall. Westrans is the successor of the Aquatrain Project that proposed the use of saline water from the Upper Colorado River Basin as a transport medium. While now proposing to use liquid carbon dioxide, Westrans in an agreement signed March 18, 1985, indicated that it will devote resources to study, plan, and develop projects that will divert saline water from the Colorado River Basin and carry it by pipeline to points of beneficial use in industry and for energy development. The Department feels that involvement in this endeavor could result in benefits to the Colorado River Basin Salinity Program.

McGEE CREEK PROJECT

Mr. Myers. When was the McGee Creek project started? Is there any requirement for local or user pay back?

Mr. Duvall. Funds to initiate preconstruction planning were appropriated in FY 1978 and for construction in FY 1980.

Of the $123,862,000 total project allocation, $95,201,000 is to be repaid, with interest. Of that repayment, 99 percent is by municipal and industrial water users. The nonreimburseable portion is allocated to such things as flood control, recreation, fish and wildlife, cultural resources, and wilderness areas.

ANIMAS-LAPLATA COST SHARING

Mr. Myers. What is the basis for the cost-sharing requirements on this project of between $200 and $300 million? Is the Animas-LaPlata Project being treated, from the cost-sharing standpoint, the same as other projects? In other words, is the nearly one-half non-Federal share for Animas-LaPlata the same percentage applied to other projects?

Mr. Duvall. The Bureau's policy as to the amount provided during the construction period by its non-Federal partners, denoted as up-front financing, is based on the letter from President Reagan to Senator Laxalt and on the Federal fiscal situation. Of course, the overall construction cost share paid by the non-Federal partner, both during the construction period and during the repayment period is usually determined either by law or by the specific project authorization. The Laxalt letter indicates that each project will be evaluated on a case-by-case basis. For Animas-LaPlata, the case-specific considerations include the benefits and cost of the project and Indian settlement considerations.

Since the cost-sharing arrangements for our projects are considered on a case-by-case basis, a direct dollar comparison is inappropriate. It is likely that the percentage of non-Federal cost sharing will probably not be the same for all projects.

Mr. Myers. A cost-sharing proposal, including contributions as well as cost-saving concessions from the State, local, and Indian governments will be delivered to you this month. Can you estimate at all how long the review of this proposal will take? Will you, if you reject the initial proposal provide the non-Federal financers with reasons for your rejection so they will know what they are up against in further negotiations?

Mr. Duvall. The Bureau is very conscious of the June 30, 1986 time limit for reaching a cost-sharing agreement and will expedite its review. The review period should be about 1 month. However, I anticipate that preliminary, but definitive, feedback will be provided within 10 days. This will include concrete suggestions.

Mr. **Bevill**. The Chair recognizes Mr. Fazio.

Mr. **Fazio**. Thank you, Mr. Chairman.

MR. FAZIO'S REMARKS

I would love to follow up on Animas-La Plata, but I think I had better just put my questions in the record for that. I share some of Mr. Myers' concerns.

The staff showed me what our share was at Buffalo Bill, $47 million out of the total project cost of almost $123 million, so it is about 40 percent. I think the people at Animas-La Plata would be happy to take that right now the way you are bidding them up to something close to 60 percent, which seems to me—given the Indian involvement there—rather stringent.

Mr. **Broadbent**. Forty percent would be in the case of the $550 million estimate if I did my math right—about $220 million, which at present would be about $40 million above their best offer.

Mr. **Hodel**. I don't want to suggest that we would accept that if they made that offer, because we are in negotiations.

Mr. **Fazio**. I understand. So are we. I think we are all aware of it here.

PRIVATIZATION

I would also like to follow up on Mrs. Boggs' questions—OCS and reconciliation. I would even like to ask you, Mr. Secretary, about privatization. I would love to hear your views, having been at Bonneville but I don't think I have got time. And the reason that I don't is that I have got a lot of western water issues that I do want to take up, and I apologize to my colleagues, some of them are going to require some delving into in some detail.

I would like to, first of all——

Mr. **Hodel**. I would be happy to respond.

Mr. **Bevill**. If the gentleman will yield at that point, I would like to get the benefit of your thinking on that, Mr. Secretary.

Mr. **Fazio**. We certainly would.

Mr. **Hodel**. If it would not detract from Congressman Fazio's time, I could give you a very short capsule, Mr. chairman.

All of the time that I was with Bonneville it seemed to me that the region would be better off if it had more responsibility and control over the Bonneville Power Administration.

I talked in terms of trying to regionalize Bonneville without ever getting into specifices as to what that meant because, frankly, having proposed the principle, I could not find any way through the thicket of public, private, large public, small public, state, and other intersecting water responsibilities. I couldn't find any way through that thicket to develop anything that looked like a workable system. My position has not changed and I support the Administration's proposal, and I am still looking forward to seeing some way to accomplish something.

My view is that the entire region, and the delegation in that region, must be unanimous in its support for whatever proposal comes forward, and without that it will go nowhere.

Mr. **Fazio**. If I could just follow up, you worked very closely with our delegation in California to upgrade the intertie and build a new one. Don't you think there is some public purpose in having a Federal involvement in bringing about a cooperative approach—a strategy to share power from one region where it is in surplus to another where it is in demand? That certainly will help Bonneville pay the Federal government back.

Mr. **Hodel**. Those are two different questions, because I have no problem with inter-regional cooperation, but it does not require a Federal entity to make it happen.

Mr. **Fazio**. Well, it would have in this instance. There is absolutely no question that the divisions in the utility's ranks could not have been overcome without the role that the Department played, and this committee; we wouldn't have had a hook, otherwise. That project would still be dead in the water right now if we hadn't been able to force their hand.

Mr. **Hodel**. Well, let me say this. One of the reasons it was hard to get together without some kind of a push was because we had a Federal entity involved.

My sense is if there had not been a Federal entity, if there had, in fact, been regional entities in the Northwest and in the Southwest, we very well might not have had some of the obstacles we had. Because people in the northwest, knowing they had a Federal handle on Bonneville, were unwilling to relinquish any piece of that without being sure that they were totally protected.

Mr. **Fazio**. If it weren't for WAPA this committee wouldn't have even been alert to the role that PG&E was playing, for example, in preventing the accords from being reached.

Mr. **Hodel**. One of the things that was causing PG&E to be resistant, as I think we both know, is their concern about the Federal role.

Mr. **Fazio**. They were concerned about the public utilities they complete with——

Mr. **Hodel**. That takes you right back to the Federal role. If you had had a non-Federal entity, I suspect some of that would have worked out. It has worked out in other regions.

Mr. **Fazio**. If you are against public power in the northwest and in California, then I think you and I have an even broader debate that we have to conduct. But I don't think either of us have the time to do it now.

Mr. **Hodel**. I am not against public power, and I hope my record is clear on that, both as the Secretary of Energy and as head of the Bonneville Power Administration.

It seems clear to me that you cannot look at what was needed because you have a Federal entity in a region and say, therefore, that you have to have Federal involvement. My sense is that there would have been occasions where we could have done more reasonable things without the political connection that people feel there because Bonneville is there.

Mr. **Fazio**. Well, we don't have as much time as we would like, and I appreciate your "but" very much—I think it underscores your position on the issue very well.

I would like to concentrate on a couple of other things that are very timely, but I would first like to wish Bob Broadbent well in his new role. I look forward to coming through McCarran International Airport and saying hello on future occasions. I appreciate the good work that you have done for the Bureau and for the Department during your tenure.

I would like to welcome Commissioner Duvall as well and indicate to Bill Klostermeyer that it is nice to work with you on a regular basis, as well.

AUBURN DAM

But I have some areas of controversy that I have to touch on. The first one has already been mentioned by Mr. Broadbent, and that is the question of Auburn.

It has been pretty evident since 1980 that Auburn Dam required re-authorization. We have talked about it in the past. We have got to provide a whole range of benefits: flood control, irrigation, municipal and industrial uses. We have got a number of benefits, but we also have very high costs associated with those benefits—and a $2.3 billion dam that has been under study since that time has obviously been difficult for many of the potential cost-sharers to participate in.

We have had a Bechtel Company study that was authorized by the State of California to see whether or not some sort of new proposal could be forthcoming that might be more cost efficient.

I think the people in California associated with the Bureau have always "supported" Auburn Dam, but it has meant different things at different times in terms of what that support really amounted to. I would like to know why, in your judgment, we have not been able to proceed on a $2.3 billion Auburn Dam at this point. Are there people willing to commit funds to finance that kind of a project through the years? Or do we really need to reconsider the form in which Auburn Dam is proposed, and come back with something that is scaled down—perhaps to fit the economics of the times: agriculture, water costs, etc.

Mr. **Hodel**. Congressman, I have used Auburn Dam as an example of how we can get ourselves high-centered. The cofferdam is part of the quarter of a billion dollars spent there, and it would cost us, we thought, too much to remove it. Had it been done other than through a flood, it would have cost us too much. However, we couldn't go forward with the project, either.

When I came to the department in 1981 my understanding was that Auburn Dam had been stopped because of the refusal of the State of California to support the project. I understood also that State agencies were doing everything in their power to block it, under the prior leadership in California. One of the things that gave rise to our cost-sharing emphasis was the recognition that where there is no local support for the project it doesn't work any longer for the Federal government to come in and say; "Hi, there, we are from the Federal government. We are here to help you." That was not the public reaction. That was not the political reaction in California, as I am sure you are well aware.

That problem brought the project to a halt, and once it was stopped, the escalating costs, approximately $2.3 billion became such an overwhelming number that there was no way that we would go forward. I think you are right, in general. I would say it isn't just in California that the Bureau supports Auburn Dam. The

Bureau would like to build what they think is a useful, worthwhile project, but the numbers won't permit them to, and we are not going to support a project at that cost level.

Mr. FAZIO. Well, I think we have to remember there was an earthquake safety issue which had put the issue on the shelf for a long time. And I don't think it is just the intransigence of the prior Administration.

I think your last point is really the relevant point. If we want to look to the future—where do we go from here, what kind of project makes sense. Do you anticipate a time when we can be sure of a proposal coming forth from the Bureau as to what kind of dam might be doable, if any? Is there something we can expect—a concrete proposal that can be presented to the Authorizing Committee? Obviously there is a heightened interest in Auburn now because its role in flood control has been reaffirmed by the recent high water.

Mr. BROADBENT. There has been an Auburn Dam Task Force, with representatives from the State and from the Federal Government, that has been looking at Auburn Dam for the last two years, or a little more than two years.

The State of California asked to do an independent study of Auburn Dam. That independent study, as you said, just came in. It was the Bechtel Study.

The task force is in the process of meeting. They have had one meeting and they are meeting again in April, I think, to look at Auburn Dam and to see—and to really measure the support that the State of California has to offer.

Mr. FAZIO. You mean in dollar terms, don't you?

Mr. BROADBENT. In dollar terms, and in environmental terms. There are a lot of environmental concerns about Auburn Dam. Most of the environmental community is opposed to Auburn Dam, because of the flows down the American River, the potential flows on Folsom South Canal, and a lot of other issues. So, until we have concluded with the State of California and its representatives, I don't think we can give you an answer.

Mr. FAZIO. So you are really waiting for them to tell you what they want to do. Is that the posture the Bureau is in right now?

Mr. BROADBENT. I am going to speak out of turn, but I think the Federal government would probably be happy if the State of California took it over and built it themselves.

Mr. FAZIO. In other words, you are in effect saying that the tremendous support that existed for Auburn in the 1960's and perhaps into the 1970's—it was held up by the earthquake determination and now by the costs associated with it—it pretty much brought the Federal government's participation to a low ebb, if any. You really, at this point, don't see that traditionally high cost dam Federally funded.

Mr. BROADBENT. Well, we don't see State support for Auburn Dam right now. We hear a lot of people saying "I would like to have it," but in State support we are looking for cash support, either for the participation in the 300 or 600 megawatt power plant, or whatever it might turn out to be, or for participation in the 2.3 million acre-feet of water that would be available through storage behind Auburn Dam. And we don't have proposals on either one of them.

Mr. **Fazio**. And isn't it a fact that the real issue is whether this is a feasible project or whether the economics associated with the cost of power and irrigation water pencil out. Is that correct?

Mr. **Broadbent**. Yes. If we had had rain for another six or eight hours in California—at the tail-end on about the 18th of February—we would have found out what flood control was for.

Mr. **Fazio**. Sure. I agree with you. But I think if you do try to market water at $150 per acre foot, which as I understand it is the estimated cost of that water—and we have water users in the State who are balking at paying $30 or $40 given the falling commodity prices for agriculture—we have a problem, don't we?

Mr. **Broadbent**. We have got to remember that the State Water Project has the responsibility to deliver two million acre-feet of water down the State Water Project Canal into Southern California. At the present time they are only delivering a million acre-feet. I think $150 to $200 an acre-foot for water in Southern California for M & I use is not out of the range.

Mr. **Fazio**. In other words you think——

Mr. **Broadbent**. I don't know that you can get any other water cheaper than that.

Mr. **Fazio**. What you are saying, Bob, is that you think Los Angeles may pay to build this dam at some point so that they get the deliveries that they need?

Mr. **Broadbent**. They may help pay for it.

Mr. **Hodel**. Let's not overlook the likely public reaction of the people in that area saying "a dam being built to send water to Los Angeles." That's not very popular. We may see this differently, but the magnitude of the risk of the earthquake fault was vastly expanded because the State Administration and very powerful organizations in that State didn't want Auburn Dam, and that will not go away. It is imperative that we not get ourselves back in the position of trying to build a two billion dollar project in this kind of a budget atmosphere, over the objections of the people of the State.

FLOOD MANAGEMENT AT FOLSOM DAM

Mr. **Fazio**. But don't you agree that we need to move forward on flood control improvements in this area, regardless of what we do at Auburn? We can improve the management of Folsom. I know it was quite a deluge this time, but there are people who maintain that perhaps the management of the water flows could have been better.

Mr. **Broadbent**. Well, I don't want to differ with you, but I think that the management in this case on Folsom was as good as it could have been. And I think we'd be delighted to give you a presentation on it.

Mr. **Fazio**. I would appreciate that. I am not accusing the management of the dam of anything, but I know there are those who feel that given the dry year we had experienced up until this deluge that there was a natural inclination to hold on to the irrigation water that we obviously would need to meet our contract commitments in the valley later on in the year.

Mr. **Broadbent**. The water behind Folsom Dam at the time we started to get the rains was well below the flood pool. But when you get 33 inches of rain, or 25 inches of rain, in six or seven days—it's the highest rainfall, the highest release in record, practically, down an American river—I don't know, you could do it, but you would probably have to empty Folsom and leave it empty. That was the same thing we ran into in 1983 down the Colorado River, and it is the same thing you run into on any river system. When you manage that river system, whether you manage it for 100 percent flood control or if you manage it for beneficial use.

Mr. **Fazio**. Well, I'm not going to Monday-morning quarterback here, but I do think the committee would like an evaluation. I know Congressman Miller has been asked to inquire of you. I don't know whether there will be hearings on the issue.

[The information follows:]

Evaluation of the Management of Folsom Dam

We have carefully evaluated how we operated Folsom Dam during the February 1986 floods, and have concluded that, given the existing conditions prior to the flood and the forecasts received from the National Weather Service regarding the storm system, our operations were fully correct. The storage level in Folsom Lake was below the flood control space requirements specified for the dry conditions that existed in the American River Basin prior to the flood. As inflow from the storm began, we released 20,000 cubic feet per second (cfs), which is the maximum channel capacity of the Lower American River. Above that level we start to inundate bike trails and other recreation facilities in the floodplain. Initial forecasts did not predict the extremely heavy rain that occurred. If we had known that parts of the watershed were to get over 3 feet of rain, we would have increased outflow from Folsom Dam sooner, but no one made such a prediction. As soon as it became apparent that this was an unusually heavy storm, we immediately began to increase releases from Folsom Dam, up to the 115,000 cfs which was the estimated leveee capacity, even though the levees were designed for 140,000 cfs. We retained adequate storage space in Folsom Lake to store all the water impounded behind the Auburn cofferdam in case that should wash out, which it eventually did. The water from the cofferdam reservoir, plus further heavy rains the night of February 18, filled Folsom Lake to capacity and forced releases of 130,000 cfs. The levee system held up under those flows, and as soon as inflow receded, we reduced the releases to take the pressure off the levees. All our operational decisions were made in cooperation with Corps of Engineers and State officials, and they have agreed that the flood was handled properly.

Mr. **Fazio**. But the issue goes well beyond the management of Folsom in this particular instance.

There are those who think we can make flood control improvements in the Folsom Dam project, if we decide not to go forward with Auburn—just as many perhaps as who think we ought to go forward with a smaller, more economical Auburn Dam, perhaps a State project, or certainly a heavy State cost-share project. But I think what I am looking for is some commitment to finishing the study on the uses of Folsom. I understand that has been headed in the direction of a termination, or at least a delay, even though it just got started. Because, in fact, people are interested in building pressure to at least resolve the Auburn issue once and for all. And I can understand why you would want to do that.

Why can't we proceed, though, with the EIS on the use of Folsom?

Mr. **Broadbent**. The water is in demand for municipal and industrial purposes—I'm not sure what you are talking about. Are you talking about Folsom South Canal?

Mr. FAZIO. Sure. I am talking about the Folsom Dam outflows. There is additional water available even without Auburn, and there is a demand for it in the local community.

Mr. BROADBENT. Well, the Folsom South Canal, again, is in court, and it is being fought by the environmental community.

Mr. FAZIO. I am talking about marketing water out of Folsom, not necessarily down the canal. I am talking about the North Sacramento community, for example. The City of Folsom.

Mr. BROADBENT. I am not aware——

Mr. FAZIO. Well, I hope to use the opportunity to heighten your awareness of the EIS that was under way and was held up, which is very important to those communities—which is simply a way of more-efficiently utilizing the water at Folsom—not necessarily building Auburn.

AMERICAN RIVER FLOWS

Anyway, I do want to ask some additional questions, and I will put them in the record, that would be more specific in relation to flows in the river. For example, I might ask you: are you potentially using the Fish and Wildlife Service river flows at this time—if we were to build another dam facility—the American River?

Mr. BROADBENT. Last I knew we were going by D1400.

Mr. FAZIO. Well, I think there are new standards that have been promulgated by the Fish and Wildlife Service that might get us over this hump of what is an adequate flow in the American River.

Mr. BROADBENT. There are continuing negotiations going on—including negotiations in the lawsuit.

Mr. FAZIO. Well, I think to put together the kind of coalition you need to build the Auburn Dam, we need to reach some sort of agreement on what are the proper flows in the river? Also, what sort of cost-sharing would be required in order to make, perhaps, a Hood-Clay connector project cost not a cost to the City of Sacramento.

Mr. HODEL. If I could comment on this, it seems to me that what had happened prior to this most-recent flood was that, as I said, we had basically become high-centered. Our sense was that there was not sufficient community support for us to do anything in that area, and our funding has been on hold.

Now this has, perhaps, heightened the sensitivity of people who would support a project.

Mr. BROARDBENT. I think it is going to be largely dependent upon whether they can generate a sufficient atmosphere out there so we could have some confidence that we could proceed without finding ourselves immediately—and almost permanently—in court, which has been the case. We have enough problems, and enough things we are trying to do with a limited budget that to seek to force a project on an area that has a substantial body of opinion and that has translated it into political opposition, it just isn't worth our while, frankly. I may be speaking too candidly, but why should we take on an Auburn Dam problem, when we have got others where people need something, and want it, and there is at least some basic community support. I think it is even more important to get support translated into dollars. I think that is what everybody has been waiting for—people to step up to the table with some money.

Mr. HODEL. It would help.

Mr. FAZIO. It is a manifestation of the level of support, frankly.

Mr. BROADBENT. Where the support or opposition is very intense is in the region. The support for the power purchases and the water purchases are elsewhere—at least to a great degree.

BUREAU'S ROLE IN THE DELTA

Mr. FAZIO. I will put some additional questions on the management of Folsom and the Auburn Project in the record, but I would like to just briefly ask you about the Bureau's role in the Delta.

Obviously, the Delta still is under tremendous pressure. We have stressed our levees all along the American River, levees throughout the whole Sacramento/San Joaquin system, and including the Delta.

We are, again, expecting the State of California to come forward with some studies about how to use the Delta for through-put purposes—again, for transfer of water to other parts of the State, central and southern California. What's the Bureau's role in participating in that?

Mr. BROADBENT. We are cooperating as participants in most of the studies that are going on in the State of California on the Delta issues, like wildlife refuge studies, water studies, additional pump-back reservoirs, all of it. We are now full participants with the State in all of the studies.

Mr. FAZIO. Are we actively funded in the budget this year to keep up our share of the agreement?

Mr. BROADBENT. As far as I know, yes sir.

COORDINATED OPERATING AGREEMENT

Mr. FAZIO. I would put a few more questions in, in that regard, but also I would like to ask you for a minute about the coordinated operating agreement hung up in the Senate right now. We hope to get it to the President, get it signed into law.

We have had the Andrus-Watt-Clark-Hodel Moratorium—I like to add all of the Secretaries; many of you like to talk about the Andrus Moratorium, but it has gone on much longer than Secretary Andrus was around the Department of Interior—on water deliveries out of the CVP. And I wondered if you think it would be a rather easy task to make those allocations almost immediately upon the signing of that bill. What is the timeframe?

Mr. BROADBENT. Well, I don't think it is going to be easy. Are you talking about long-range water?

Mr. FAZIO. I am talking about sales that are being asked to be made by all the districts up and down the State right now.

Mr. BROADBENT. It is going to be necessary to complete all of the environmental impact statements.

Mr. FAZIO. On each sale, for each district?

Mr. BROADBENT. No, in each area. We are doing one on the upper Sacramento River right now. That's being completed, and we are doing all the rest of the environmental impact statements, which will be necessary before you can market that water. Now, if the moratorium is lifted you could begin the process of marketing the water, long-range.

Mr. **Fazio**. But we have a-million-point-one acre-feet that will be available when that bill is signed. And everybody's been waiting for this thing to be signed for years—the agreement between the State and the Bureau was really reached several years ago. It has just gotten to the point now where Congress is signing off on it.

And it is a question of how quickly can we get that water out to the people who seem to think that they can use it. I don't know why we can't be preparing for the inevitable signature on the bill.

Mr. **Broadbent**. Well we are. We are doing environmental impact statements now. We could market the water short-term until we could enter into long-term agreements.

Mr. **Fazio**. So, it will be an immediate use of that water.

Mr. **Broadbent**. There is a question about how much of it could be used, because it is a question on whether you have the facilities to move it and use it. But, yes.

Mr. **Fazio**. Well, the demand has been much greater than the 1.1 million acre-feet. I think it is probably three times that—whether you believe it or not, people have said they want it.

Mr. **Broadbent**. When they step up to the table and sign their name you know there is a real demand.

Mr. **Fazio**. Well, I agree with you. That is the only test for earnest money. But my sense is that we have known this is coming for a long time. We could have prepared for——

Mr. **Broadbent**. We are prepared.

WESTLANDS WATER DISTRICT

Mr. **Fazio**. Let me ask some questions about Westlands. We have had a couple of controversies in that area. This will be my last line of questioning. I hasten to assure my colleagues I will move on.

Two problems:

(1) We, in this committee in particular—in concert with Mr. Coelho and Mr. Miller—moved to require the Bureau to loan $3.7 million to Westlands Water District so that they could work on some management solutions, and some efforts to reduce selenium problems and clean up the Kesterson area. And we have found that the Bureau feels it lacks authority to go ahead on the premise that—for whatever reason the laws that we amended here in the 1966 act, etc., were not adequate.

I don't find that compelling. I am sorry your Solicitor is not here, but I understand that the American Law Division to the Library of Congress is in total agreement with what this committee did, Mr. Bevill, on behalf of a number of the parties involved has written—and said, "what's holding us up, why can't we go forward with what is such a broadly based agreement between environmentalists and farmers and everybody else"—we want to get going on a solution to the selenium problems.

In fact, they are asking all over the west, and we might be even providing some leadership for resolution of this problem elsewhere. Could you tell us what the holdup is?

Mr. **Hodel**. The advice of the Solicitor is that we do not have authorization to do what they requested that we do with the $3.7 million. In fact, we have undertaken a considerable amount of the study work under authority that we did have currently so that a good portion of that work is already underway.

I think the Solicitors' view on the westlands loan was that we technically did not have the authority to do it. The problem that we get into is one of interpretation of what the law means. We are ordinarily encouraged not to be too expansive in our interpretations of what authorizing language means. The Department is usually encouraged to be fairly careful not to do things which are not clearly authorized by law.

Mr. Fazio. We felt we were very clear, very careful, and everybody else seems to agree but your solicitor, who is conveniently not here today.

Mr. Hodel. Well, I don't think it would be appropriate to have him here. I think lawyers will meet with him and debate with him, but I would be hesitant to put a Solicitor in the position where he has to defend his legal opinions in an appropriations hearing or an authorizing hearing because it really does taint the process.

I have confidence in my Solicitor. I think his interpretation makes sense, as I read it. We are trying to assist getting the law changed. We are not opposing the proposal, but we think it needs to be done in such a way that I don't find myself subsequently encountering a GAO opinion, saying we had no authority to do this. The fact that there was great concensus doesn't impress GAO at all.

Mr. Fazio. Well, solicitors, in recent years, have been all over the lot on so many issues that I tend to agree that it wouldn't help to have them here to go all over the lot again. But I think the problem that we all have is that the approach you have taken would trigger the Reclamation Reform Act, as we understand it. That is the interpretation a number of people have put on the suggested legislation.

I understand you floated with some people, and we are concerned about that. Not that it——

Mr. Broadbent. The legislation that we propose would exempt the loan from the Reclamation Reform Act , and would exempt the district from the new and amended parts of the law. That was really the effect of the legislation and of the report language that was put in by the House and the Senate; it was to not trigger the Reclamation Reform Act. Our bill would not trigger reclamation reform, either.

Mr. Fazio. There is a dispute, I guess, as to what your bill would do, versus ours. But, if it doesn't do that we ought to take a look at it and see whether we can work out some agreement. Not to say that I don't think it is appropriate in some instances to trigger reclamation reform as it relates to Westlands. And that leads me to another line of questioning about Westlands, and that is in relation to the agreement that you are attempting to negotiate with them right now.

Could you give us a status report? As you know, the Appropriations Committee agreed in the CR to have that come before us for 30 days so we could review it and decide whether or not we thought it really was in keeping with existing authority that the Bureau has on a range of issues as it relates to other water districts, and the CVP, and of course the COA, should it be signed into law.

Mr. HODEL. As you know, the history of this situation is one where we came in 1981 and found a 44 year contract that had been signed in 1963, at a rate that probably looked pretty good when it was signed. Circumstances changed dramatically, and we sought to use the authority of what was called the Krulitz opinion, which was issued under the prior Administration and which we supported. Based on that opinion, we attempted to raise the rates. We have been in litigation ever since, and the judge has said he would like us to settle that lawsuit. We have attempted to negotiate possible settlements.

When one of your colleagues heard about what Westlands and some of our regional staff thought was an appropriate settlement, he became extremely agitated; I think that would be a fair characterization. And, of course, we were placed in a different position because we are in the process of negotiations. We have not agreed to a settlement, but we are suddenly being accused of bad faith for even thinking about such a settlement, which is very awkward situation.

Mr. FAZIO. I know—I was in it, as well.

Mr. HODEL. We have continued to try to negotiate what we think is a suitable and appropriate settlement. Let me say that the contract we have is a undesirable contract.

There is a possibility that in the litigation the court will say it is a binding contract, and we are stuck with it despite the Krulitz opinion. If we had a clean slate today and we were starting to sell water to Westlands, we would have a contract pursuant to the existing law.

What we are trying to negotiate is the best deal between a possible court decision, what we currently have, and the existing law. We have not reached an agreement, so I am not in a position to tell you what it will contain. We have been hung up over a number of key issues which the District felt were too demanding on our part.

I think, in light of the political atmosphere that has been created here, it is perfectly reasonable for us to take a fairly hard line with regard to that settlement. We have too many important Bureau of Reclamation projects that should not be contaminated by our attempting a settlement which simply permits a great deal of hostility to be manifested to the Bureau. Therefore, I am not particularly inclined to settle at less than wholly-acceptable terms.

Mr. FAZIO. So you see these negotiations continuing?

Mr. HODEL. They are continuing.

Mr. FAZIO. And you will be fighting to ensure that the costs of O&M and capital costs involved will not be spread to other water users and the taxpayers in general?

Mr. HODEL. That is what we have been attempting to accomplish. If we can't accomplish that, one of our options is simply hold fast and let the court decide. Let me remind you, this is a settlement which would have to be submitted to a court.

Mr. FAZIO. Sure.

Mr. HODEL. In fact, the judge could determine that he will make a ruling in the case and say, "I'm not going to wait for your settlement any longer," if that were his decision. It might be much less favorable than what we are able to negotiate even now, but that is a risk we may have to take in view of the reaction of some key members of the Congress.

Mr. FAZIO. And you are not at the point where you are going to permanently contract the 250,000 acre-feet of additional CVP water?

Mr. HODEL. I am in no way contracting at this point, because we have not reached an agreement that is satisfactory to us.

Mr. FAZIO. I apologize to my colleagues, and I thank you all for your very complete answers.

I have a number of more specific questions in regard to each of these issues that I will put into the record, plus some questions about Trinity River Restoration, Grass Valley, and others.

I thank the Chairman for his leave.

Mr. BEVILL. All right. You may enter those into record.

[The questions and answers follow:]

AUBURN-FOLSOM SOUTH UNIT

Mr. Fazio. Since 1980 it has been determined that Auburn Dam requires reauthorization to provide flood control, irrigation, municipal and industrial water supply, recreation and other improvements.

The Bureau has had a $2.3 billion dam under study since then, and has discussed the benefits and costs of the proposal with potential beneficiaries. Now the Bechtel Co. has developed some new proposals at the request of the state, which the Bureau has under advisement.

Why in your judgement have potential beneficiaries of the Bureau's $2.3 billion dam been unwilling or unable to commit to financing their portions of the project over the years?

Mr. Hodel. The Bureau's latest estimated cost to complete the Auburn Dam area facilities is $1.5 billion at January 1984 prices and not the $2.3 billion as stated. The cost to complete includes the dam, powerplant, Highway 49 relocation, and reservoir recreation facilities. The $2.3 billion includes the Auburn area features along with the costs for the Foresthill Divide facilities and completion of Folsom South Canal.

We do not know why there exists a lack of interest. It is our belief that the State is the proper public institution to attempt to pull various interested groups together and develop a financial plan for the dam's construction. If that is done, the Bureau of Reclamation would be available for technical assistance and construction management on a reimbursable basis.

For the foreseeable future, the only way construction of Auburn Dam could proceed would be if non-Federal beneficiaries were to provide most, if not all, of the financing for it.

Mr. Fazio. Why has the Administration not proposed a specific package for Auburn Dam, complete with location, a design, a set of beneficiaries, a cost share breakout detailing how much is expected up front, how much will be federally financed, what the repayment terms will be, and whether [illegible] the OMB supports it?

Mr. Hodel. A specific package will be formulated and presented in the near future with the assistance of the Federal/State Auburn Dam Task Force. The potential type and size of Auburn Dam are being evaluated by the Bureau of Reclamation, the State Department of Water Resources, and the Western Area Power Administration. A working group of the Joint Federal/State Task Force recommended the following tentative schedule to the Auburn Task Force at the February 26, 1986, meeting: recommendations would be made at the April 7th meeting: selection of a plan by May 16, 1986; and completion of detailed appraisal cost estimates by June 27, 1986. Subsequently, there would be negotiations with non-Federal interests regarding their commitment to providing funding for the project.

Mr. Fazio. When will the Bureau have its response to the Bechtel alternatives? Will the Bureau choose one to promote? How many studies will be required after that to finally get a plan in place to which beneficiaries might subscribe and which can be the basis for a reauthorization request from the Administration?

Mr. Hodel. The Bureau staff, along with the State Department of Water Resources did prepare in January 1986 a summary paper and analysis of the Bechtel Report along with a schedule for further action. The tentative schedule calls for selection of a plan, to be concurred with by the State/Federal Task Force, by May 16, 1986, and completion of more detailed costs estimates by June 27, 1986. Subsequently, a reauthorization legislation package can be assembled and processed.

Mr. Fazio. Studies are underway into Auburn and related issues, such as flows into the Lower American River and an EIS for marketing water out of Lake Folsom. I understand the Folsom EIS, though recently begun, has been delayed, pending conclusion of Auburn studies.

Can you tell me the flow standards the Bureau is preparing to propose for the Lower American River? Are they the new Fish and Wildlife Agency standards?

Mr. Hodel. The Bureau advises me that the existing minimum flow standards for the Lower American River are specified in Decision 893, which was adopted for the Folsom Project. In connection with the Auburn studies, the Bureau evaluated various flow conditions which included an option to provide 1750 ft^3/sec from September 15 to December 31, 1250 ft^3/sec from January 1 to May 14, and 2000 ft^3/sec from May 15 to September 14 in normal and above-normal years along with appropriate deficiencies in dry and critically dry years. These flow parameters were consistent with the results and recommendations by the U.S. Fish and Wildlife Service and the instream flow evaluations conducted by several entities in 1981 on the American River.

Mr. Fazio. Can you explain to me what has happened very recently to cause cessation of a Folsom EIS that was begun only several months ago? Why can't we at least work on marketing water out of Folsom that would be available no matter what: without Auburn, with Fish and Wildlife standards met in the Lower American, and with diversons being made to East Bay MUD?

Mr. Hodel. The Folsom-American River Basin Water Marketing EIS has been deferred at this time because of the current litigation regarding flow releases in the Lower American River which involves the *East Bay Municipal Utility District* vs. *Environmental Defense Fund, et al.* The litigation has been referred to the State Water Resources Control Board. Without some consensus regarding flows in the Lower American River, a meaningful EIS can not be completed and a subsequent water marketing program developed for American River water supplies.

Mr. Fazio. Is it going to be the Bureau's intention to make area of origin water recipients from Folsom Lake pay Auburn-based rates even though their water would have been available in Folsom without the $2.3 billion expense of Auburn Dam? Are people who do not need Auburn going to be netted into sharing its costs?

Mr. Hodel. The Central Valley Project (CVP) was conceived and designed as an expanding multipurpose resource development. The most economical and productive facilities were developed first with more expensive units developed later to meet the increasing demands of Northern California. The Auburn-Folsom South Unit of the CVP was authorized to be operationally and financially integrated with the other features of the project. Therefore, all water users in the project, including those adjacent to the existing Folsom Reservoir, will be expected to pay their share of the CVP, which may include costs of Auburn Dam. This is the same procedure that is followed by the large utility organizations. The addition of Auburn to the system would provide more water to meet all of the CVP needs. It would also contribute to the water supply in the American River which would facilitate a resolution to the flows in the Lower American River and meeting the water supply needs in the American River service area.

Mr. Fazio. Will you propose that municipal and irrigation water recipients pay for any Hood-Clay canal connection, or will you attempt to charge Sacramento for it?

Mr. Hodel. The Hood-Clay pump recovery facility has been proposed to be included in the reauthorization for the Auburn-Folsom South Unit. It is possible that the repayment for such a facility could be required by the agricultural and municipal water users in Sacramento and San Joaquin Counties along with the fishery and recreation interests in Sacramento County and the State of California. In recent evaluations, consideration is being given to the possibility of greater conjunctive use operation of utilizing surface water and ground-water supplies in the Folsom South area, which may not require the need for a Hood-Clay pump recovery facility.

Mr. Fazio. One problem with the uncertainty over Auburn Dam is that the benefits of the project may simply not be sufficient to amortize themselves and thereby supply flood control for Sacramento. It may be time to cease barking up a wrong tree, if that is what the big Auburn Dam is.

Has the Bureau examined a smaller, flood control-only dam?

Mr. Hodel. Your concern is valid. However, at this time we do not have a meaningful benefit/cost ratio because the task group analysis and subsequent Department reviews of possible alternative proposals are not complete. It is our position that State and local interests should decide if they need the project, what its capacity and purposes should be, and how they are going to finance it.

The Bureau has evaluated smaller reservoirs at the Auburn site but not solely for the purpose of flood control. The size of Auburn Dam and the resulting costs and accomplishments are currently being evaluated in the studies relating to the Auburn Dam Task Force.

Mr. Fazio. Has the Bureau examined modifications proposed two years ago by the State of California to Folsom Dam that might increase the dam's flood fighting capabilities?

Mr. Hodel. We are not aware of modifications to Folsom Dam that were proposed by the State of California two years ago. In September 1982, the Central District of the State Department of Water Resources made a preliminary study of Flood Control Alternatives on the Lower American River. The Department did not recommend any modifications to Folsom in this preliminary report, but did recommend "...further consideration of variations of these alternatives, especially the alternative involving modification of the Folsom Dam outlet and revision of the operational criteria using the existing downstream levee system."

In commenting on the report, the Corps of Engineers stated: "The purpose of the report is stated to be to determine if American River floodflows can be regulated by one or more alternative plans but no consideration is given to the feasibility, reasonableness or viability of the alternative plans. Most of the schemes studied are either unacceptable from a safety standpoint or would require extensive studies before a determination could be made that they are reasonable. The purpose of the report should state that no consideration has been given in this report to the safety or feasibility of any alternative plans."

It is our view that all the alternatives recommended for further consideration do not meet the tests for safety or feasibility.

Mr. Fazio. What would the costs be of raising and strengthening the levees through Sacramento to reassure ourselves that they would be capable of handling higher flows than we had even two weeks ago?

Mr. Hodel. The 1982 report by Department of Water Resources estimated that to upgrade the American River levees to a capacity of 152,000 ft ^{3}/sec would cost about $55 million. The costs estimated to upgrade the levees to 180,000 ft ^{3}/sec were $95 million. These costs were based on work presented by the Bureau in the 1974 Amendment to the Final Environmental Statement and Supplemental on Auburn-Folsom South Unit, indexed to 1981 prices. Current price indexing would put the cost of the 152,000 ft^3/sec upgrade at almost $65 million and the 180,000 ft ^{3}/sec upgrade at about $110 million.

Mr. Fazio. Should this Subcommittee direct the Corps of Engineers to examine the last two options: modifying Folsom, and enlarging the levees? Or are they more appropriately the Bureau's concerns?

Mr. Hodel. The alternatives presented in the State Department of Water Resources September 1982 report have been evaluated by both the Corps and the Bureau. None of the alternatives provide the level of protection afforded by the flood space associated with Auburn Dam. If Auburn Dam is not constructed, the flood control alternatives of modifying Folsom Dam outlets or the American River levees may provide some additional protection. The Corps of Engineers would be the appropriate agency to assess the feasibility of such a proposal.

FOLSOM EXPERIENCE

Mr. Fazio. The recent floods ended up doing considerable damage in Sacramento, but virtually none within the actual watershed of the American River itself. Folsom Dam and the Lower American River levees contained the flows, though for a while they were coursing through the levees at 130,000 cubic feet per second, a rate almost exceeding their design capacity and certainly stressing them more than they had ever been stressed. There has been extensive debate that these flows might have been better handled by the Bureau. I have no wish to Monday morning quarterback decisions made under considerable stress, and which, after all did not result in damage. However, is the Bureau conducting any inquiry of its own into the events of the flood to see what lessons might be learned from it?

Mr. Hodel. Following any major flood event, the Bureau routinely evaluate its operations in coordination with the Corps of Engineers, which is the agency responsible for all flood control operations at Federal projects. The Bureau has carefully evaluated how Folsom Dam was operated during the February floods and has concluded that, given the existing conditions prior to the flood and the forecasts received from the National Weather Service regarding the storm system, its operations were fully correct. The storage level in Folsom Lake was below the flood control space requirements specified for the dry conditions that existed in the Basin prior to the flood. As inflow from the storm began, we were releasing 20,000 cubic feet per second (cfs). Flows in the American River above that level inundate bike trails and other recreation facilities in the floodplain. Initial forecasts did not predict the extremely heavy rain that occurred. If the Bureau had known that parts of the watershed were to get over 3 feet of rain, it would have increased outflow from Folsom Dam sooner, but meteorologists were unable to make such a prediction. As soon as it became apparent that this was an unusually heavy storm, the Bureau immediately began to increase releases from Folsom Dam, up to the 115,000 cfs, which is the safe levee design capacity. The levees were designed to handle 150,000 cfs for limited duration.

The Bureau retained adequate storage space in Folsom Lake to store all the water impounded behind the Auburn cofferdam in case it should wash out, which it eventually did as it was designed to do. The water from the cofferdam reservoir, plus further heavy rains the night of February 18, filled Folsom Lake to capacity and forced releases of 130,000 cfs. The levee system held up under those flows, and as soon as inflow receded, the Bureau reduced the releases to take the pressure off the levees.

All operational decisions were made in cooperation with Corps of Engineers and State officials, and they have agreed that the flood was handled properly. Preliminary data on the inflow to Folsom Lake from the storm indicate that the magnitude of the flood exceeded the 6-day design inflow volume by about 20%. The 6-day design volume is approximately a once in 120 year frequency event. The Bureau firmly believes that, given the magnitude of this flood event, its operations personnel did an outstanding job and that if another storm system with these characteristics generated another flood of this magnitude, it would operate in the same manner.

Mr. Fazio. Were we able to follow our manuals for the operation of the dam?

Mr. Hodel. Yes, all operations were strictly in accordance with Corps of Engineers flood control regulations.

Mr. Fazio. Did the experience show that the manuals set forth an adequate flood control regime?

Mr. Hodel. Yes, because the Bureau handled a flood greater than the project design flood, and no serious damage occurred along the Lower American River, it seems that the existing flood control regulations are fully adequate.

Mr. Fazio. Did the experience show we should have done anything differently?

Mr. Hodel. No, our operations were in accordance with flood control regulations; the flood was handled without serious flooding along the Lower American River; and thus, if we experienced another flood event like this past one, the Bureau indicated that it would operate in the same manner.

ANIMAS-LAPLATA PROJECT

Mr. Fazio. As I am in the case of Auburn, I am interested in the Bureau's reasons for requesting almost 50 percent local cost sharing for the Animas-LaPlata Project. Why did the Bureau arrive at that share? Did you have some policy basis for it consistent with policies applied elsewhere? If not, why not? Or are you just trying to get all you can from the local sponsors?

Mr. Hodel. The Administration's cost-sharing policy for Bureau of Reclamation projects looks at each project on a case-by-case basis to develop a cost-sharing expectancy. For the Animas-LaPlata Project, the $200 to $300 million non-Federal financing target was developed based on an evaluation of the project's benefits and costs, and Indian settlement considerations.

Mr. Fazio. I am told the Bureau has put its cost-sharing demands rather loosely to the Animas-LaPlata sponsors: for a $622 million project, you have sought from $200-300 million. Is this true? Why this great spread? Does this mean that if the local sponsors were to simply offer to pay $200 million up front, you would accept their offer?

Mr. Hodel. The financing range has some latitude to show our willingness to work with project beneficiaries toward a mutually agreeable package. We are open to proposals on the Animas-LaPlata Project cost sharing but would need to consider the terms and conditions of such proposals before responding.

Mr. Fazio. Does the one-third to one-half demand at Animas mean that the Bureau is going to demand $700 million to $1.1 billion for Auburn?

Mr. Hodel. No. With regard to Auburn Dam we believe that for the project to move ahead, in the foreseeable future, it would need to be financed almost entirely from non-Federal sources.

Mr. Fazio. I understand that you have reduced the project cost at Animas by some $50 million. Why don't you also reduce the local cost share being required by one-third or one-half $50 million? Is it appropriate for the Bureau to take all the benefit of the reduced project costs?

Mr. Hodel. It is the Administration's belief that the Federal Government's fiscal situation demands diligence in all areas including cost sharing on water projects. Therefore, we feel that a $200 or $300 million non-Federal financing objective is appropriate for the Animas-LaPlata Project.

BUREAU'S ROLE IN DELTA

Mr. Fazio. The State of California is engaged in Delta water transport studies. The Corps of Engineers (COE), we were told two weeks ago, is participating in those to an extent reflected by existing flood control obligations and to the extent new conveyance improvements would create new assets for which protection is a new benefit.

Is the Bureau participating at all in these efforts?

Mr. Hodel. The Bureau has been meeting on a regular basis with the Department of Water Resources (DWR) and COE staff over the last year as part of the Bureau's Cross Delta Investigations. During fiscal year 1985, the Bureau was developing its Plan of Study for this investigation and coordination was being done to assure that there would be no duplication of work between the three agencies. During fiscal year 1986, with the initiation of the investigation, the three agencies have been coordinating activities to monitor the results from the different agencies.

Also, the Bureau has been actively involved in, and/or supported, environmental studies in the San Francisco Bay-Delta Estuary for several years. To better coordinate study efforts, in 1970 the Interagency Memorandum of Agreement was signed by the directors of the California Department of Fish and Game (DFG) and the DWR, the Bureau, and the Fish and Wildlife Service (FWS). This agreement provides the framework for the Interagency Ecological Study Program. The Delta Support Study, in reality, is the Bureau's contribution to the agreement. Objectives of the agreement state in part:

> "defining design and operating criteria which will assure
> protection of fish and wildlife resources which requires
> a thorough understanding of the requirements of these resources,"
> and
> "the intent of this Memorandum of Agreement is to provide
> for the performance of studies necessary to obtain a
> thorough understanding of the requirements of fish and
> wildlife resources."

The Interagency studies now involve two additional agencies, the California State Water Resources Control Board (SWRCB) and the U.S. Geological Survey. A seventh agency, the COE, may also soon be involved in the Interagency studies.

Mr. Fazio. How would you define the extent of the Bureau's involvement?

Mr. Hodel. Over the last 7 years DWR has been actively working on developing a Delta water transfer plan. Because this is a critical State resource, it is necessary that the State of California take the lead in the effort of developing a plan that is acceptable to the entire State. During fiscal year 1986, under the Cross Delta Investigation, the Bureau will be actively involved in reviewing the accomplishments of DWR in Delta water transfer studies.

In order to meet the long-term water needs of the San Joaquin Valley and the entire State of California, a more efficient and environmentally acceptable means of moving water past the Delta needs to be developed.

The Bureau participates in estuarine studies as part of the Interagency Ecological Study Program. The Bureau participates in the committee meetings and in fiscal year 1986 transferred $815,000 to DFG and $45,000 to the FWS in support of their Bay-Delta programs. Our past efforts have included:

1. Operation of about 20 continuously operating electrical conductivity monitoring stations since 1950 to monitor changes in water quality resulting from water project operations.
2. A routine coordinated water quality and biological "grab" sampling monitoring program from 1968-74 throughout the Delta, Suisun, and San Pablo Bays.
3. Various specific studies throughout the estuary related to water project operations and understanding mechanisms influencing the fisheries.
4. Participation in several Interagency Ecological Study programs.

The Bureau's major staffing effort in fiscal year 1986 and future years includes the San Franciscso Bay-Delta Hydrodynamic and Modeling Study. The Bureau is primarily coordinating the field data collection effort.

COORDINATED OPERATING AGREEMENT, AND THE CONTRACT MORATORIUM

Mr. Fazio. Assuming the Senate passes and conference committee can agree on the authorization for the Coordinated Operating Agreement (COA) this spring, how soon do you foresee lifting the Andrus-Watt-Clark-Hodel moratorium on new CVP water contracts?

Mr. Hodel. Assuming that the legislation authorizing execution of the Coordinated Operating Agreement includes adequate protection for the Suisun Marsh, we will consider the conditions set forth in the moratorium to have been met.

Mr. Fazio. When will the Bureau's new Central Valley Project water pricing policy come out? Will the moratorium stay in place until it does? Or will the Bureau proceed to enter into new contracts with old water pricing?

Mr. Hodel. We anticipate a decision on the new rate-setting policy to be forthcoming in the near future. We are continuing to execute new and amendatory contracts which have no impact on our ability to participate in meeting Delta water quality. The contracts contain rates based on one of the versions of the policy proposed for approval. In the event the selected option is different, the contracts provide for rate adjustments based on the adopted policy.

Mr. Fazio. Outline for us please what the new water pricing policies will be.

Mr. Hodel. The policy on Central Valley Project water pricing has not been finalized. The various rate-setting options proposed are based along functional lines; i.e., components of the rates reflect various irrigation services provided to the contractor rather than reflecting the costs of a single or series of facilities. All options incorporate annually adjustable rates for new, amended, or renewed water service contracts. The actual charge will be the lesser of cost-of-service or the water users' payment capacity. At a minimum, the rate must cover the annual O&M costs applicable to water delivery.

Mr. Fazio. Do you anticipate that the new policies will reduce the demand on the 1.1 million acre feet of yield that the new COA is supposed to firm up for the Bureau?

Mr. Hodel. Higher priced water will probably result in a reduced demand. However, we do not expect the demand to fall below 1.1 million acre feet.

Mr. Fazio. Will there still be hungry water users otherwise able to pay for water who will be left unsatisfied as a result of the "duck water amendment" probably to be placed into the COA authorization by the Senate? This amendment would delay for some period of time contracts for 250,000 acre feet of the COA yield.

Mr. Hodel. The demand for water by those willing and able to pay for it exceeds the currently available supply. Our marketing strategy, however, would allow some additional time for studying duck water needs while a "duck water amendment" is in place.

WESTLANDS

Mr. Fazio. The 1986 Energy and Water Bill asked that the Bureau loan $3.7 million to the Westlands Water District so the district could help find solutions to the selenium problem which it faces. We felt that an actual district could make a unique contribution to the west-wide effort because it could combine research with management practices in a way that might show how to maximize the benefits from both.

We were informed by other members of Congress that the Department feels it lacks authority to make loans under existing law. Has the Department outlined in writing precisely what authority it lacks?

Mr. Hodel. The Solicitor will soon provide a full explanation to Congressman Bevill's February 7, 1986 letter requesting this information.

Mr. Fazio. Have you proposed to anyone language which would solve your problems?

Mr. Hodel. Yes, we provided as a drafting service, proposed language to Congressman Pashayan and Senator Wilson.

Mr. Fazio. Why did you not inform this Subcommittee of these things?

Mr. Hodel. This matter is under consideration within the Department of the Interior and has not been resolved at this time.

Mr. Fazio. In the Interior Department Chapter of the Continuing Resolution a provision required that any out of court settlement with the Westlands Water District of its suit against the Department not be submitted to the U.S. District Court until Congress had at least 30 days to review it, or in no event earlier than March 15. We are coming up upon March 15.

Are you still negotiating a settlement with Westlands?

Mr. Hodel. Yes, we are still in negotiations on this matter.

Mr. Fazio. When do you anticipate that a settlement might be reached?

Mr. Hodel. No deadline has been set for concluding a settlement or continuing with the litigations in Court. At this time, we still do not know whether a negotiated settlement is possible.

Mr. Fazio. Does the agreement thus far entail a reclassification of selenium, desalinization and/or drainage facilities as a project cost, and is the only barrier to the whole CVP paying for these facilities still only the unadopted pricing policy, which would say only as a policy (versus statute) that districts will pay their own drainage?

Mr. Hodel. This point is a matter under consideration and has not been fully resolved at this time. When, or if, this issue is resolved through settlement of litigation or otherwise, we will provide a detailed explanation. I would comment, however, that no proposed rulemaking by the Department of the Interior would shift these costs to districts who do not benefit.

Mr. Fazio. If so, would the agreement be contingent on actual adoption of this pricing policy?

Mr. Hodel. Again, a detailed explanation cannot be made until a final settlement is reached.

Mr. Fazio. I understand that reclassifying the facilities to a project expense category would entail revising the Interior Solicitor's San Luis Unit decision. Has that decision been rewritten? Will a settlement be contingent on that being done? Can one simply agree to rewrite a legal opinion before actually rewriting it?

Mr. Hodel. These points are under consideration by the Solicitor and the Department of Justice. I will fully abide by the conclusions reached by the Solicitor on these matters.

Mr. Fazio. The documents shown the Hill last December during the action of the Continuing Resolution conference indicated that Westlands would pay $100 million toward the costs of the selenium/salinization facilities, but the total costs would be at least $300 million. There was also a cap placed on the payments Westlands would make, limiting its contribution to operation and maintenance of these large and complex facilities. Thus, it is highly unlikely that Westlands will make any payments toward the at least $200 million capital balance of these facilities. This Subcommittee would then have been under the pressure of a court settlement to fund the balance. If we were not to, Westlands could presumably have a cut-and-dried suit for damages.

In any settlement now under negotiation is there a cap of any sort on Westlands' obligation to repay the full capital and O&M costs of any facilities constructed to resolve Westlands' selenium problem?

Mr. Hodel. This is another point under consideration that we cannot respond to at this time.

Mr. Fazio. How would any payment cap be consistent with assertions that neither the rest of the Central Valley Project, nor the taxpayers, will pay for any of the selenium costs?

Mr. Hodel. Again, this point is under consideration at this time.

Mr. Fazio. Also part of the agreement were commitments by Interior to sign long-term contracts for some 250,000 acre feet of water now being provided Westlands only on an interim basis. As well, there were some positive findings to the effect that other portions of the Westlands District could make beneficial use of still another 100,000 acre feet. Some experienced water attorneys around the State said that they would love to have such important stipulations in a court agreement as they entered water contract negotiations.

In any agreement now under negotiation, is there a proposal to permanently contract for 250,000 acre feet? Is there a proposal to make positive findings regarding the needs for an additional 100,000 acre feet?

Mr. Hodel. We are unable to respond to this point at this time as it is under consideration.

Mr. Fazio. Can you certify that the 250,000 acre feet, if contracted for with Westlands, would not reduce the 1.1 million acre feet of water available for contracting when the CVP contract moratorium is lifted?

Mr. Hodel. We are still evaluating the effect and have not made any final determination at this time.

GRASS VALLEY CREEK DEBRIS DAM

Mr. Fazio. We notice that on the Trinity River Restoration Program that the total estimated cost of the Grass Valley Debris Dam exceeds the current authorized appropriation ceiling. You also state a less costly alternative is being considered and may allow the facility to be constructed within the appropriation ceiling. What is the current status of this situation?

Mr. Duvall. Based on work done the last few months, we have selected an alternative damsite with an estimated cost that results in this program being within the authorized appropriation ceiling.

Mr. Fazio. Congress provided $500,000 in fiscal year 1986 to initiate final planning and design of a debris dam on Grass Valley Creek and urged the Bureau of Reclamation to proceed as rapidly as possible with the construction of this facility. Are there any potential problems that could delay this project?

Mr. Duvall. There is a minor technicality in that the fiscal year 1987 Budget Justifications indicate only preconstruction work will be preformed. However, an access road to the new damsite should be initiated in fiscal year 1987. Only the description of work needs to be revised.

SAN LUIS UNIT

Mr. Fazio. Has the San Luis Unit authorized ceiling been reached? Has legislation been submitted to the Interior Committee to raise the ceiling for Kesterson and other San Luis Unit costs? If needed and not submitted, why not and when?

Mr. Duvall. The San Luis Unit has two separate and distinct appropriation ceilings provided in the authorizing legislation (Public Law 86-488, 74 Stat. 1960). One ceiling, for the major project facilities, is $290,430,000, subject to indexing. The other ceiling for the distribution system and drains is $243,176,311 not subject to indexing.

A request for legislation to increase the ceiling by $12.4 million was forwarded to the appropriate Congressional committees early in 1985; however, as of March 4, 1986, the bill has not been reported out of either the House or the Senate Committees. Language in the Conference Report supporting the Fiscal Year 1986 Energy and Water Development Appropriation Act allows studies to continue at the Fiscal Year 1985 level of effort. Legislation is needed to raise the ceiling $11.5 million to provide authority to obligate the funds included in the 1987 budget request. That legislation will be submitted shortly.

Mr. **Bevill**. The Chair recognizes Mr. Watkins.

Mr. **Watkins**. Thank you, Mr. Chairman.

Secretary and you all, thank you all for coming, for being here.

REGIONALIZATION

Mr. Secretary, I have people that are going to want a little more insight on your comment about regionalization, because that is different from privatization. Would you like to comment on that a little bit? My interpretation of that is just a little bit different.

Mr. **Hodel**. I don't think that the Administration's concept of privatization would be in any way in conflict with my concept of regionalization. The reason I used that word when I was at Bonneville was that I recognized that we might have some combination of State, public power, private power, and regional interests involved.

I think the thrust of privatization, from the Administration's standpoint, is to put into the hands of a non-Federal sector the management and financing responsibilities. That would not preclude any kind of structure that would fall under the category of regionalization as I have used it.

Mr. **Watkins**. I think there is a difference in interpretation, maybe, or the perception that people have.

Mr. **Hodel**. That may well be.

Mr. **Watkins**. It is kind of alarming to me, you know, an entity, a regional entity that has a purpose of providing some economic growth best utilizing the resources and the purposes of lakes and other things—has a little more acceptance than privatization. What I am saying is: I think that the term "privatization" as such, even though I came from the business world, concerns me if something has built for the greatest interest of the public's good, especially in that region. I just wanted to get your interpretation of that regionalization, because I think it has got a little bit different type of——

Mr. **Hodel**. I had no sense that, in talking about privatization, the Administration was suggesting that the power marketing agencies should be just turned over without careful consideration, to the non-Federal sector. That certainly is a view that is the basis for some people's concern. It is their interpretation of it. But I have not read that in the Administration proposal.

Mr. **Watkins**. Have you had any suggestion from OMB and the Administration about privatization at some of the Bureau of Reclamation lakes?

Mr. **Hodel**. No. I am not aware of that at all.

Mr. **Watkins**. They are in the Corps.

Mr. **Broadbent**. The Corps operates a lot of the recreational facilities.

Mr. **Hodel**. They are talking there about what would be a type of concessionaire operation. That would be more in the nature of a contracting out, as we do with some facilities in the national parks, which is a perfectly appropriate thing to do in many circumstances.

If I may come back to the privatization issue. It seems to me that one thing that should be said in regard to the power marketing agencies, is that no proposal which would turn over these kinds of facilities to somebody who would operate them without regard to all of their multiple purposes would possibly succeed. Our privatization proposal will be considered by the Congress. It is just so obvious to me and to all to whom we have talked. We are not going to come up with a proposal that has any chance of success if it doesn't provide assurance that the power will be marketed in accordance with the needs and requirements of the area and that the recreation and other multiple-purpose uses will be served.

Let me also say that in permitting dams, the Federal Energy Regulatory Commission requires such things as fish ladders, which may be maintained out of the funds generated by the dam, recreation facilities, and the like. These things may be required as part of the permit. It can be done almost without regard to who is the owner. It does seem to me that if you're more comfortable with the concept of regionalization, as I have described it, you ought to be viewing the word privatization as it applies to these activities in the same light. Nobody from the Administration ought to be recommending that we just put these facilities up for the highest bidder and say, "Go take them." That will not work. Among other things, we will have to have fairly complex arrangements on who takes the power, at what price, whose obligation it is to maintain this substation, and that interconnection, and the like.

Mr. WATKINS. There has got to be an insurance that those people in that region are going to be adequately served, and served to their best interests, you know, not someone out of some other region of the country saying, "We are going to take what dollars we can scrape off this one and take it somewhere else."

Mr. HODEL. Let me follow up that discussion by referring to the Laxalt letter. I think I interpreted from your remarks that you are trying to provide a great deal of flexibility, depending on the region and the economic conditions. Is that a correct interpretation? Can you give me a couple of examples?

Mr. WATKINS. I was impressed last year when I discussed the region in my area that has got double-digit unemployment, and a low per capita income—in fact, our income is less than what the President wants for the Nicaraguan rebels, per capita, and less than for Hong Kong, and I am just trying to figure out what kind of flexibility we might have.

Mr. HODEL. Let me say that, as a matter of policy and principle in approaching support for projects, it seems to me what the Bureau of Reclamation looks at is what the benefits of the project are. I do not think that we should take into account that it would be a nice project for a particular area from an economic standpoint, as far as simply providing economic assistance in the region. It seems to me that the responsibility is to look for projects which, under the charter of the Bureau, make good sense as projects. Then we have a further problem at the present time, which is that we must decide if we have the money currently to study and to construct. And once constructed, can we meet our obligations downstream? Because, as you know, the curve on cost expenditures is high down the road. It is very cheap to get started.

Mr. WATKINS. Maybe I should leave you where you are.

Mr. HODEL. I have enough trouble with my present job, thank you.

Mr. WATKINS. Mr. Secretary, you know, 50 percent in that area I am talking about had to leave in search for a job. Most of them went out to different areas of California. We are driving them to those areas because we don't feel like we can provide some necessary infrastructure. There is no way we can meet cost sharing to the extent of up-front financing that is being proposed. It automatically shuts down water development, as Mr. Myers said a while ago. I would like to hear that, because it looks like some areas may be able to get some water. But it is not going to provide any for an economically-depressed area of the country. Because I am trying to say: How do we provide jobs, keep people there, in double-digit unemployed areas, low per capita income areas—we've got to have adequate water development. You talked about Auburn a while ago, maybe providing water downstream to L.A., and that's a controversy—we have been very cooperative in Oklahoma with McGee Creek. It's going to Oklahoma City. I would like to think that overall we have some commitment to a region of the country like the Ozarks or Appalachia areas. How do we provide opportunities?

My communities, many of them, are having to carry water by fire trucks. A lot of the entities don't have adequate water for industrial development. And you know and I know that you cannot have economic industrial growth without adequate water. And so I am very interested in that flexibility you all talked about because I think it would probably give me a little more feeling that you are trying to take those things into consideration.

Mr. HODEL. I think that under the Laxalt letter we have quite a bit of flexibility, rather than having fixed-percentage, as would be the case with the Corps. We have a considerable amount of flexibility. But I don't want to promise too much by saying that. I come from a State, which is one of the few western States that has had a decline in population. It had a population decrease a year ago for the same reasons you are indicating: very severe problems in its basic industry. People felt that they did not have an opportunity to progress there. Nevertheless, I would be very resistant to having the Bureau of Reclamation come to me with a proposal for a project in my home State of Oregon which was a marginal project, or which was one that would siphon funds from a project already under construction or committed, just because it might provide an opportunity for a new level of economic activity in my home State.

Mr. WATKINS. I know you believe in "helping the least of these my brothers and sisters." And if we don't watch it, those "least" are going to have to pick up and pack up and continue to leave for another umpteen years.

Mr. HODEL. Let me suggest, however, that I have grave reservations about picking the pockets of their other brothers, at my decision, to help.

Mr. WATKINS. I know it is hard to thread that needle with a camel.

Mr. HODEL. It's a tight needle to thread.

And it does seem to me that cost-beneficial projects can be financed. I'll put it differently. If there is an opportunity for industrial development in an area, which is dependent upon a water project which makes economic sense, my belief is that there is a surprising amount of opportunity to finance at least a portion of it.

Mr. **Watkins.** I have been working in economic development for a long time. That is what got me, I guess, to Congress. And it is hard to tell an industry, "you come, and I will have you a water project in 20 years." You've got to have the water there first, and the infrastructure, and say, "we will provide it."

Mr. **Hodel.** This is kind of philosophical, but if I can turn it around it is hard to tell the taxpayers of America that, at a time when we have high deficits, we ought to tap the Federal treasury in order to provide a situation where in 10 or 15 or 20 years there will be an economic development opportunity in a community, when there is not sufficient current potential for the community itself to somehow participate.

FOREIGN ACTIVITES IN THE BUREAU

Mr. **Watkins.** I know that. But we are doing that for foreign countries. You've got increases in what you are providing for foreign countries. The Corps has funds for foreign countries. We are increasing the present budget for foreign aid by 16 percent and the military by 13 percent, while cutting away the infrastructure of this country. And my area of the country is crying out for help. I can't accept that. I just cannot accept that kind of reasoning. My people's hope is to have some kind of job in a region of the country that has been ignored all of these years. Up-front financing on water? There is just no way. I might as well say, "Folks, we can do better if we will not only defederalize our area, but also denationalize our area; then we will get foreign aid." That's about what is happening. I hate to put it that way, and since I am on that I would like to ask, if I could—I noticed that in 1985 you had about $10 million, in 1987 you are proposing $12 million more for what all you have got going over in those countries—I noticed it said that you get reimbursed. How many people do you have working in foreign countries?

Mr. **Duvall.** I am advised that we have 25 people stationed overseas at the present time. And that program is fully reimbursed.

Mr. **Watkins.** And you've got about $12 million that is proposed to go over there? What if you were not able to use that money? I don't think the Bureau of Reclamation should even be over there.

Mr. **Duvall.** We don't spend federal money. It is all reimbursed to us.

Mr. **Watkins.** Well I don't think you should be using personnel. What are you doing? Are you trying to build up people over there at the expense of my people who are already poor?

I am not describing a foreign country, a third world country. I am talking about Oklahoma, southeast Oklahoma, that has a per capita income less than Hong Kong and a per capita income less than what the President is asking for the rebels—$100 million. That's kind of hard to explain to my people when I go back home. We are willing to do all these things for other areas—I'm all for providing water for Oklahoma City. I think that's good. We are willing to cooperate and help. But what I am worried about is a double standard. To the more wealthy we are saying, "We'll build your water system if you have got the up-front financing." To the poor we are saying, "Folks, just go ahead and crawl. We are not going to help you. Your kids can go on someplace else and get a job." That is what I am seeing.

PLANNING AND CONSTRUCTION INVOLVING DIFFERENT AGENCIES

In the past I have heard that the Bureau has accepted work of another agency after the planning and engineering and design has been done by another agency. Maybe a lot of the early work has been done with the Corps, etc. Have you accepted and developed and built water projects?

Mr. **Broadbent**. Not that I know of.

Mr. **Watkins**. I am positive you have. Would you mind checking that out and providing that for the record. That early engineering, design, and everything, was done by another agency and then—I don't know if Congress had to authorize it——

[The information follows:]

Planning and Construction Involving Different Agencies

It is entirely possible that the Bureau of Reclamation has constructed projects which at some time were studied by another agency. Likewise, that situation may have worked in reverse order. However, we are not aware of any specific cases where it was planned that one agency would plan a project and another agency would construct it.

There are instances where Reclamation and the Corps of Engineers have been involved in constructing facilities associated with the same project. For example, the dam, dikes and reservoir for the Folsom Unit, Central Valley Project, California, were constructed by the Corps whereas the powerplant was constructed by Reclamation. Another example involves the New Melones Dam in California, which was constructed by the Corps and is operated and maintained by Reclamation as an element of the Central Valley Project. Also, Corps of Engineer flood control dams on the Missouri River serve as the water supply for many Reclamation projects under the Pick-Sloan Missouri Basin program.

Mr. **Broadbent**. Throughout their histories, the Corps and the Bureau of Reclamation have studied a lot of projects, and one entity ends up, sometimes, building it and the other one doesn't. Some major studies in Denver were done by the Bureau of Reclamation, and now they are being done by the Corps. But not any more. There is a memorandum of understanding between the Corps and the Bureau of Reclamation that there is no duplication of effort in any studies.

MULTI-PURPOSE PROJECTS

Mr. **Watkins**. Right. I understand that. Like, the project was designed by one, and at the end was built by the other. Mr. Secretary, you have talked about several projects, some of them had different purposes. Do some of these projects have more than one purpose?

Mr. **Hodel**. Yes, there can be M & I water, irrigation water, flood control, recreation, power——

Mr. **Watkins**. All in one project?

Mr. **Hodel** [continuing]. And fish and wildlife benefits.

Mr. **Watkins**. All in one project?

Mr. **Hodel**. It could conceivably be all in one project.

Mr. **Watkins**. So you are not limited to any one single purpose, so to speak?

Mr. **Hodel**. No. In fact, quite often the only way a project is feasible is because it has got multiple elements and there is a constituency supporting each of those elements.

Mr. **Watkins**. And you don't have any particular arbitrarily-selected one purpose that has to be a certain percent—some agencies come up with that kind of criteria.

Mr. **Hodel**. Mr. Broadbent is reminding me that we are under the same restriction as the Corps is. We can't build single-purpose municipal and industrial water projects. Other than that, I know of no guideline that says it has to be predominantly one or another, or that there has to be a certain ratio or percentage. Each project will vary, depending on where it is and what the water flows are.

Mr. **Watkins**. You don't have any arbitrary percent?

Mr. **Hodel**. Not that I am aware of. No.

Mr. **Watkins**. I have been kind of concerned about that. I find that's happening. And there is no way in an economically depressed area that you can get it. As Mr. Myers said, I think all of us are trying to find a way to move forward, but I don't want to move forward by eliminating the lower-income areas of this country.

We are changing our water policy from one based on need to one based on wealth, and that's wrong.

OKLAHOMA WATER PROJECT STUDIES

Let me move on from that. I had a couple of studies in my area on the East-Central Oklahoma water study and the Kiamichi power study, that were not funded in FY 1987. Why did the Bureau not recommend——

Mr. **Hodel**. Let me give you the first part of the answer and let the Bureau respond to the second part.

The first part of the answer is that in putting this budget together and looking at our current and outyear funding problems, I requested that, initially, about $10 million be taken out of our General Investigations planning money, which is approximately $30 million. The Bureau, I think, came back with an amount just over $5 million which they felt they could acquiesce to in that area. In that way, I forced them to set priorities within the General Investigations program to determine how they would handle reduced funding. Frankly, this was part of a budgetary mandate that I imposed on them.

Mr. **Watkins**. In my case, we have the lowest income-area in the State and we can't even get any studies.

Mr. **Hodel**. Well, perhaps the Bureau should comment on why those studies, rather than some others, were excluded, but I set the parameters for the decision.

Mr. **Duvall**. Let me comment on that if I may, Congressman.

The East-Central Oklahoma Water Supply study, and the Kiamichi hydropower study——

Mr. **Watkins**. That stands for the end of the trail.

Mr. **Duvall**. Is that what it stands for?

The two projects cover the same basic geographic area. In 1985 we had $247,000 and $202,000 for them.

Mr. **Watkins**. In all respect, you are in error there. I sat down when those counties were divided out to make sure that there was no overlapping of the Kiamichi hydropower area and also the East-Central water area, which covers about five counties or so in my area. It is a very personal thing to me. I know exactly where those lines are.

Mr. **Duvall**. There are three studies there. I may be confusing two of them. The point that I wanted to make, though, is that in the same general area we have proceeded with the studies for two years. When we came to the necessity of reducing the planning studies this year, we looked at those studies and looked at the remaining study, the Southeast Oklahoma Water Supply study, and our people elected to blend the knowledge and the information that had been developed from the three separate tracts all into one study and try to accomplish the objectives that you were seeking when you created each of those separate projects. They plan to come up with a report covering all of them rather than lose anything that had been gained from the money that had been spent to date.

Mr. **Watkins**. Basically, what you have done is applied money on top of money—just arbitrarily reached out and defunded. I don't think the Committee is going to accept that. It may be changing some priorities that you all have, but we can't accept that situation. I hope the Committee will work with us. But I am deeply concerned.

Let me point out why it worries me. Out of $28 million requested for FY 1987, funding of $1 million would be available for four new investigation and three new Advanced-Planning studies. The major emphasis for studies in FY 1987 is on increasing industrial water supply and energy. Now why are you starting seven new studies and at the same time stopping the two studies in my area?

That is what gets me, Mr. Secretary, when we say we have money problems and all of this, and then we say we are going to start seven. But, then you mark out the two in my area. It is kind of disconcerting to me, to say the least.

Mr. **Duvall**. The thought process that we went through in making those decisions, and that we go through in bringing any new study forward for consideration, is whether the potential exists on that project to come up with an economically-viable project that will move you into a real project. That includes a lot of the other things that we have spoken about—the presence of cost-sharing and some of the other considerations.

Mr. **Watkins**. See, what bothers me about this attitude is that you are writing off the less fortunate areas of this country.

Mr. **Duvall**. I understand that.

Mr. **Watkins**. I don't know if our nation will be judged the same way we as individuals will be, but we sure are not measuring up under this Administration as trying to take care of people who are less fortunate, and areas that are less fortunate.

Mr. **Duvall**. I understand, and I, as well as the Secretary, am sympathetic to that concern. At the same time, from the standpoint of the charge and the law as it exists, and under which the Bureau of Reclamation operates, we have a procedure that we follow that may not always answer the kind of concerns that you have. I think the record is replete with circumstances wherein various Congressmen of various interests may have written in projects in order to get us to relieve some of those economic injustices.

Mr. **Watkins**. Well, I am trying to write them in, too. But you all left mine out.

Mr. **Duvall**. We have a difficult time with the budget constraints that we operate under, of trying to do everything or be all things to all people.

Mr. **Watkins**. Well, I am going to be asking this Committee to restore that. And I think that I have had that right. I have spent long hours working on this committee trying to take care of the things that are important to my areas.

CHICKASAW NATIONAL PARK, VETERANS LAKE PROJECT

I have visited in Merrick County and the Chickasaw National Park with people from throughout that county about that particular park I have been trying to help on the last two or three years. Prior to my coming here it was basically ignored, and there are a lot of improvements that are needed. I wonder if you could, for the record, bring me up to date on the Veteran Lakes Project, including the spillway and recreation facilities that we might be looking at. Also, the sewer and water line system in that, if I might ask, Mr. Secretary.

Mr. **Hodel**. Surely.

[The information follows:]

Veterans Lake Project

The Veterans Lake Project at the Chickasaw National Recreation Area involves the following improvements:

Spillway rehabilitation, including construction, contracting and project supervision;
Rock Creek Corridor Hike/Horse Trail, including construction and pavement of parking areas and roads;
Recreation facilities, including construction of roads, trails and bridges, overlook, comfort station, lift station and utilities;
Sewer project (reconstruction of line).

The status of activities planned or underway is described below.

Fiscal Year 1986 Funding

In fiscal year 1986, $1,170,000 (including the reduction specified by the Budget Deficit Reduction Act) was provided to renovate portions of the Travertine District sewer system. These funds will be used to replace the main trunk sewer system, approximately 10,600 feet.

Fiscal Year 1987 Funding

In fiscal year 1987, $870,000 has been included in the construction budget to complete the renovation of the sewage collection system, primarily the lateral collecting sewer lines, approximately 19,600 feet.

Current Status and Long Range Plans

The funding status and long range plans for the other projects are as follows:

1. Spillway Rehabilitation: Funds ($637,000) were appropriated to rehabilitate the spillway. Design is now underway by the Bureau of Reclamation; construction will occur late this year or early next year. The Bureau recently revised its estimate for this project to $1,137,000.

2. Rock Creek Trail: A trail study and preliminary design is now underway and should be completed this year. Construction will be accomplished both by appropriated funds (contingent on priorities and funding constraints) and by donated labor.

3. Recreation Facilities: An amendment to the park's General Management Plan outlining recreational development in the Veterans Lake area was approved April 2, 1985. It specifies construction of roads, trails, a comfort station, picnic pavilion and related utilities. Funding will be requested in the future contingent on Servicewide priorities and budgetary constraints.

4. Sewer Project: Reconstruction of the sewer system will be completed with funding appropriated in 1986 and budgeted in 1987.

Estimated Funding Requirements

(1) Spillway Rehabilitation: The Bureau of Reclamation estimates that a total of $1,137,000 will be required to complete this project. To date $107,000 has been spent on planning and design work and $530,000, from the original appropriation of $637,000 is available for construction. An additional $500,000 is needed to complete the project based on the revised estimate.

(2) Rock Creek Trails: Preliminary cost estimate as follows:

Phase I Veterans Lake to Buckhorn	$1,595,000
Phase II Veterans Lake	942,000
Phase III Veterans Lake to the Point	328,000

(3) Recreation Facilities: Preliminary cost estimate for total planned recreational development is $584,500.

(4) Sewer Project: Funds requested in 1987 ($870,000) should be sufficient to complete the project.

Capability

(1) Spillway Rehabilitation: Design is now underway. Construction bids will be solicited this year based on the final design and specifications. If bid amounts exceed the available funds--$530,000--the Service will determine if other fund sources are available or possibly defer completion of the project.

(2) Rock Creek Trails: Final drawings and specifications would need to be prepared first. Probably only a portion of this work (Phase I) could be accomplished in 1987.

(3) Recreation Facilities: Estimates, plans, and specifications for this work will need to be prepared. This is a fairly uncomplicated proposal and could be obligated in 1987.

(4) Sewer Project: The Service has the capability to complete this work as proposed in the 1987 budget.

Estimated Completion

(1) Spillway Rehabilitation: Project will be completed in 1987, unless available funds are insufficient.

(2) Rock Creek Trails: This project does not have a Servicewide priority and is not currently scheduled.

(3) Recreation Facilities: This project does not have a Servicewide priority and is not currently scheduled.

(4) Sewer Project: Design is now underway. We estimate that all work will be completed by the end of 1987.

Potential Problems

(1) Spillway Rehabilitation: There is a potential problem with insufficient funds; see above.

(2) Rock Creek Trails: At this time, we foresee no unusual problems for this proposed project.

(3) Recreation Facilities: At this time, we foresee no unusual problems for this proposed project.

(4) Sewer Project: We foresee no problems in completing this project.

Mr. **Watkins**. And, also on that Arbuckle Lake, an area that is more commonly known in the Davis area of Oklahoma as Guy Sandy Boat Ramp—an area that is needed if we are going to try to help and service some of the local area and the local people.

I have a number of other specific questions that I want to, make a part of the record and that way I won't be delaying this committee any longer. I am a believer in private-sector jobs. I am a believer in trying to provide economic growth and development. I don't want people to have to continue to rely on transfer of payments. But we can't do it unless there is some kind of system—help in letting us get it developed. And I guarantee my people will work. My people will work.

We had 17 jobs open up and we had something like 1,500 applications for them. But we don't have jobs. And I have got to try to get them jobs. So, I appreciate your help and maybe we can work on a project that might allow us to do that.

I will get with you all a little later on about McGee Creek and when we might set up a dedication date.

Thank you, Mr. Chairman.

Mr. **Bevill**. Mr. Secretary, we appreciate the good job you are doing. We appreciate the cooperation you and your department give us. We will have several questions we are going to put in the record to be answered in the record.

[Questions submitted by Chairman Bevill, Mr. Conte, Mrs. Boggs and Mr. Watkins as well as the budget justifications follow:]

EAST CENTRAL OKLAHOMA WATER SUPPLY STUDY & KIAMICHI HYDROPOWER STUDY

Mr. Watkins. In fiscal 1986, $300,000 was appropriated for each of these studies. Were all of these funds expended or obligated on this study? If not, how were they spent?

Mr. Duvall. The $300,000 appropriated for each study will be either expended or obligated during fiscal year 1986. Both studies will be terminated in fiscal year 1986 and a report prepared.

During fiscal year 1986, preliminary designs and cost estimates for 29 potential dam and reservoir sites will be completed through the East Central Oklahoma Water Supply Study. Alternative municipal and industrial (M&I) water conveyance routes to various cities and towns in the seven-county study area will be formulated. These alternatives will be displayed and ranked according to their viability. Irrigable lands for growing of high-value specialty crops will be completed in conjunction with and without the M&I alternatives.

On the Kiamichi Hydropower Study, a total of 53 potential powersites have been identified and screened for "run-of-the-river" power. Of these potential sites, representative sites will be selected an analyzed for "firm" and "peaking" potential. These sites will be displayed and ranked according to their potential viability.

Mr. Watkins. Your budget for fiscal 1987 has no funds budgeted for either of these studies. Will all of the work elements of the Plan of Study for each of these projects be completed with fiscal 1986 funds? If not, why were funds not included within the fiscal 1987 budget to continue these studies? Are you stopping these studies without completing these? If so, why? If not, how will you continue them without funds?

Mr. Duvall. Fiscal year 1986 funding will allow the studies to be carried through the plan formulation stage which will identify all alternatives studied. In fiscal year 1987, refinement of feasibile elements will be accomplished and selection of the preferred plan will be made as elements of the overall Southeast Oklahoma Water Supply Study. We feel this strategy will still accomplish the major objectives of the studies in a more efficient manner.

Mr. Watkins. When are the studies as per the originally approved Plan of Study scheduled for completion? What additional funding levels are required to complete the studies as per the Plan of Study? How much of that amount is required in fiscal 1987 to maintain the original schedule? What is the capability of the Bureau in fiscal 1987 regarding these projects? How much sooner could these two studies be completed if the full capability for each were provided in fiscal 1987?

Mr. Duvall. The Kiamichi Hydropower Study and the East-Central Oklahoma Water Supply Study were originally scheduled to be completed in fiscal years 1987 and 1988 respectively. However, due to fiscal constraints, no funds were included in the fiscal year 1987 budget for those two studies.

Mr. Watkins. In your budget press release for fiscal 1987, on page 6 under General Investigations, you indicated that within the $28 million requested for fiscal 1987 that funding of $1 million would be available for four new investigations and three new advance planning studies, and that the major emphasis for studies in fiscal 1987 was increasing municipal and industrial water supply and meeting energy needs. Why are you starting seven new studies and at the same time stopping two studies in Oklahoma before they are completed, especially when one of the Oklahoma studies is to increase municipal and industrial water supply and the other is to meet energy needs? Is this not inconsistent with your stated objective?

Mr. Duvall. We have terminated funding on these two studies after fiscal year 1986 because the plan formulation process of identifying alternatives will be essentially completed. Refinement of the plans is incorporated as part of the ongoing Southeast Oklahoma Water Supply Study. Wtih this concept of consolidation in mind, we are not inconsistent in requesting new starts while terminating ongoing studies.

NORTHWEST OKLAHOMA WATER SUPPLY STUDY

Mr. Watkins. In fiscal 1986, $185,000 was appropriated for this project. What was accomplished with these funds? Your budget for fiscal 1987 includes $170,000 for this project; what are these funds to be used for? When is this project scheduled for completion? What level of funds will be requried to complete this study? Does this study duplicate efforts accomplished in the completed or planned High Plains studies of the Ogallala Aquifer and associated water supply needs of the area? Does this study cover an area included in the High Plains studies?

Mr. Duvall. During fiscal year 1986, data gathering on problems and needs continues. preliminary proejcts for municipal and industrial (M&I) water demands will be accomplished. A contract to determine the location, quantity, and quality of the surface water in and around the study area has been awarded. During fiscal year 1987, the water supply source will be identified and alternative plans will be formulated to convey the water from the source to points of use. The most viable alternative will be selected. The study is scheduled for completion at the end of fiscal year 1988, with preparation of the final Planning Report/Draft Environmental Statement. Funds for fiscal years 1987 and 1988 are currently set at $170,000 and $150,000, respectively.

While part of this study area was included in the completed six-state High Plains-Ogallala Aquifer Area Study, it does not duplicate efforts accomplished under the study. The Northwest study will concentrate on specific M&I water supply problems and needs.

SOUTHEAST OKLAHOMA WATER SUPPLY AND DISTRIBUTION STUDY

Mr. Watkins. What was accomplished with the $300,000 appropriated for this study in fiscal 1986? How will the fiscal 1987 request of $230,000 be spent? Through this study, the Bureau is working with the Corps of Engineers and the Soil Conservation Service as a part of a multiagency task force to develop a comprehensive interagency, multipurpose water resource plan for the Red River Basin in Oklahoma. What steps have been taken to insure that duplication of efforts by the individual agencies is being eliminated? When is the Bureau scheduled to complete its part of this effort?

Mr. Duvall. During fiscal year 1986, data gathering on problems, needs, and resources continues. Eighteen potential dam and reservoir sites have been identified. Preliminary designs and cost estimates of these potential sites will be accomplished. An analysis of existing water supply and water demand projections for the eight-county study area will be completed. During fiscal year 1987, alternative plans will be fomulated to convey the water from its source to the projected demand areas. The most viable plans will be identified. The study is scheduled for completion in fiscal year 1988, with a report on the preferred plan. Data from the Kiamichi Hydropower Study and East-Central Oklahoma Water Supply Study also will be consolidated and presented in this report. The information displayed in this report will be incorporated in the comprehensive interagency Red River Basin Study.

To insure against any duplication of effort, an agreement between the Bureau and Corps of Engineers was signed on Feburary 13, 1985, which displays the study effort by both agencies. In addition, we have been working with the Soil Conservation Service to supply data on identifying lands suitable for irrigation of specialty crops.

McGEE CREEK PROJECT

Mr. Watkins. I understand that you are nearing completion of the McGee Creek Lake Project. What work have you programmed for this project in fiscal year 1987?

Mr. Duvall. In fiscal year 1987, acquisition of land and mineral rights and construction of access roads will continue. Archeological mitigation work will be completed.

Mr. Watkins. Will the project be completed in fiscal year 1987 under your current work schedule? If not, what activities remain for completion in future years?

Mr. Duvall. All scheduled work will not be completed in fiscal year 1987. Construction of the dam and aqueduct system will be completed this year. Acquisition of land and mineral rights and construction of access roads are not scheduled for completion until fiscal year 1988.

Mr. Watkins. What is the status of your work on the East Side and West Side access roads?

Mr. Duvall. The access road work has been broken down into several contracts to allow small local contractors an opportunity to bid on the work. Several contracts have been awarded and are nearing completion. Contracts for construction of the last two segments of the access roads will be awarded this summer.

Mr. Watkins. Will these roads be completed in fiscal year 1986? In fiscal year 1987? If not, what is your current plan of work for completion of these roads?

Mr. Duvall. We plan to complete the final two segments of the access roads early in fiscal year 1988.

Mr. Watkins. How much additional funding would you need to complete them in fiscal year 1987?

Mr. Duvall. Construction time requirements for this type of work are such that the road construction cannot be accelerated by additional funding.

Mr. Watkins. What is the level of your total authorization for the McGee Creek Project?

Mr. Duvall. The current appropriation ceiling for the McGee Creek Project is $141,255,000.

Mr. Watkins. What is the level of total appropriations for the project through fiscal year 1986?

Mr. Duvall. Through fiscal year 1986, $90,548,787 has been allocated to the McGee Creek project.

Mr. Watkins. What will be the total level of appropriations through fiscal year 1987 if your budget request is approved?

Mr. Duvall. The fiscal year 1987 budget request is $7,755,000 and if approved, appropriations through fiscal year 1987 will total $98,303,787.

Mr. Watkins. What is the remaining balance of the authorization for the McGee Creek Project?

Mr. Duvall. The remaining balance of the appropriation ceiling after fiscal year 1987 will be about $42.9 million.

ARBUCKLE PROJECT

Mr. Watkins. You received $430,000 for fiscal 1986 for the Arbuckle Project in Oklahoma; have you obligated all of these funds? If so, how? If not, how much of the funds have been obligated; how do you plan to spend the remaining funds; and, why have the remaining funds not been obligated for this project?

Mr. Duvall. Through February, about $26,000 have been obligated in fiscal year 1986 on the Arbuckle Project. Obligation of additional funds is contingent upon the city of Sulphur signing a repayment contract.

Mr. Watkins. What is the status of this project, including the pumping plant and pipeline to the city of Sulphur and the Guy Sandy Boat Ramp parking expansion? What obstacles stand in the way of completion of the Arbuckle Project activities?

Mr. Duvall. Preliminary studies and investigations for the Sulphur Pipeline and Pumping Plant have been completed. No work was done on the boat ramp. The project report, an environmental assessment, and the economic analysis will be presented to the city of Sulphur for its review. The next step will be to start repayment contract negotiations with the city.

Mr. Watkins. I note that you have requested only $310,000 for the Arbuckle Project for fiscal year 1987. What level of funding would you require to be able to complete design of the pumping plant and pipeline to the city of Sulphur in fiscal 1987?

Mr. Duvall. Until such time as the city of Sulphur agrees to repayment, we do not intend to proceed with final designs and specifications work. We feel the $310,000 requested for fiscal year 1987 will be adequate to cover the scheduled activities.

Mr. Watkins. How much funding would you require to be able to complete both design and construction of the pumping plant and pipeline in fiscal 1987?

Mr. Duvall. Time constraints would make it impossible to complete construction in fiscal year 1987.

Mr. Watkins. How much funding would be required to complete the Guy Sandy Ramp parking expansion in fiscal 1987?

Mr. Duvall. I understand $567,000 could be used as part of the appropriation to the National Park Service.

Mr. Watkins. What other activities need funding in fiscal 1987?

Mr. Duvall. We are not aware of any other funding needs.

Mr. Watkins. What is your capability on the Arbuckle project in fiscal 1987?

Mr. Duvall. The $310,000 requested is the Bureau of Reclamation capability for fiscal year 1987. These funds will be used for design activities if the city of Sulphur enters into the repayment contract. The National Park Service could utilize funds in FY 1987 to complete the planning activities and obligate funds to complete the work.

FOREIGN ACTIVITIES

Mr. Watkins. I am deeply interested in knowing what funds the Bureau is spending in foreign countries or on any activities or personnel engaged in activities with foreign countries. Last year, in response to a similiar question, you supplied this committee with information indicating that the Bureau has spent $10,005,000 on foreign technical assistance in fiscal 1985. What programs overseas is the Bureau involved in now, and how much is the Bureau spending on these programs? How many personnel are assigned to jobs overseas? How much travel is involved in Bureau activities overseas? Who and for what purpose travels overseas for the Bureau?

Mr. Duvall. The following summarizes Bureau of Reclamation activities in foreign countries all of which are fully reimbursable to the Bureau.

CHINA FY86 $400,000 China
Resident Staff: 0

The Bureau has been involved with the planning of the massive Three Gorges Project on the Yangtze River since about 1940. The Bureau signed a 5-year agreement with the Ministry of Water Resources and Electric Power in August 1984, to provide technical assistance and training for the final planning and design phases and the construction of the Three Gorges Project. The 1985 work totaled approximately $600,000. Of note is the fact that the Bureau is collaborating closely with the U.S. private sector to maximize its opportunities for obtaining equipment and consulting contracts.

ECUADOR FY86 $150,000 AID
Resident Staff: 1

The Bureau was requested by AID (Agency for International Development) in early 1984 to provide the services of an engineer to AID in Guayaquil. Under the agreement the Bureau will assure that technically sound procedures are followed for the reconstruction and/or repair of irrigation projects, including washed-out levees, dikes, open drainage, and rechanneling of rivers following the destructive high floods of 1983.

EGYPT
ASWAN HIGH DAM FY86 $1,150,000 AID
Resident Staff: 4

The Bureau was requested by AID to provide technical advisory assistance for 8 years beginning in 1982 to the Egyptian Electrical Authority for replacement of turbines for the Aswan High Dam. The Bureau project manager was assigned to Cairo in October 1983 and the Bureau is also providing short-term temporary assistance, review and advice to the Egyptian Electrical Authority regarding design, fabrication, and installation of the runners and associated equipment. Bureau technical specialists arrived at Aswan in February 1985 to begin disassembly of the first of 12 turbine units. This project involves approximately $90 million in equipment sales to the U.S. private sector.

MASTER WATER PLAN FY86 $150,000 AID
Resident Staff: 1

The Bureau was requested by AID to provide a hydraulic engineer to assist the Egyptian Ministry of Irrigation in installing an automated hydrologic data collection system in the Nile River Basin and various canals. Work by the Bureau on this project will be completed by 1987.

ISRAEL FY86 $15,000 ISRAEL
Resident Staff: 0

In June of 1984, the Bureau and the Ministry of Agriculture of the Government of Israel signed two agreements. Under the terms of the agreement for technical assistance, the Bureau will provide technical advisory assistance on an as-needed basis for specific technical projects. All costs for this assistance will be fully reimbursed to the Bureau. The Bureau has provided technical experts on canal automation, irrigation project operation and rehabilitation, and other areas of water resources development. The second agreement is a cooperative science and technology agreement which calls for cooperative exchange of technology in specified areas. When both sides agree to cooperate on a project, they will mutually agree on the project, scope of work, and objectives.

MALAYSIA FY86 $420,000 MALAYSIA
Resident Staff: 3

As a continuation of Bureau involvement in the Kuala Lumpur Flood Mitigation Project, which began in 1975, the Bureau is currently providing advisory assistance with site preparation and construction of the Batu Dam. The Bureau has three on-site advisors and will also provide expert consultation services, as necessary, through completion of this project.

MOROCCO FY86 $1,630,000 AID
Resident Staff: 1

As the world's foremost agency in weather modification research and operations, the Bureau is designing and assisting implementation of a weather modification demonstration program in an effort to augment the natural water supply in the country. Morocco has been in a long drought and additional assistance was requested by the King of Morocco as an urgent measure. The Bureau has one person stationed in Morocco to coordinate activities. Essentially all of the materials and equipment are being furnished by U.S. contractors.

PAKISTAN

FY86 $520,000 World Bank
Resident Staff: 2.5

The Bureau has long been involved with various irrigation projects in Pakistan and recently signed a 5-year agreement under which the Bureau will provide assistance for the Drainage IV Project in the Faisalabad section of the Punjab Province. Under this agreement the Bureau will assist with preparation of alternatives and solutions for the area. Activities include plans, designs, and tender documents for subsurface drainage schemes; construction supervision; operation and maintenance strategies; and soil and land classification investigations.

SAUDI ARABIA
DESALINATION TECHNOLOGY
(HYDROS PROJECT)

FY86 $6,045,000 Saudi Arabia
Resident Staff: 3

Under the U.S.-Saudi Arabian Joint Economic Commission, the Bureau has a Memorandum of Understanding with the Saline Water Conversion Corporation to provide assistance in the establishment of a Research, Development and Training Center at Al Jubail, one of the World's largest desalination plants on the Arabian Gulf. The Bureau currently has three persons stationed in Saudia Arabia and a technical coordinator in Denver for this project.

WATER RESOURCES DEVELOPMENT
(AGWAT PROJECT)

FY86 $300,00 Saudi Arabia
Resident Staff: 2

The Bureau provides technical advisory assistance to the Ministry of Agriculture and Water under the U.S.-Saudi Arabian Joint Economic Commission. Primary activities include advisory assistance for municipal and industrial water supply, storage, and distribution in addition to technical review for designs and estimates of a variety of Saudi projects.

SOMALIA

FY86 $800,000 AID
Resident Staff: 4.5

Under an AID Participating Agency Service Agreement, the Bureau is to complete a reconnaissance-level water and land study for the Juba and Lower Shebelli valleys. A five-man team is assigned to Somalia to investigate the water resources and prepare a master plan for land development. The Bureau's involvement was requested by the World Bank because of concerns about the irrigation potential in the region.

SPAIN FY86 $290,000 AID
Resident Staff: 0

In cooperation with the Director General of Hydraulic Works, the Bureau participates in a series of water resources management projects to more efficiently use available water in Spain. The joint program is conducted under the U.S.-Spain Scientific and Technology Agreement and funds for the project are provided to technical agencies from AID through the Joint U.S.-Spain Secretariat. Bureau and Spanish scientists participate in this joint effort as a part of their routine research activities with coordination in Denver and Washington.

ZAIRE FY86 $180,000 ZAIRE
Resident Staff: 1

For the past 12 years the Bureau has provided technical assistance to the Societe Nationale d'Electricite of the Government of Zaire in the design and construction of the Inga-Shaba Transmission Line. The Inga-Shaba is a 1700KM long extra-high voltage transmission line between the Inga Dam (near Kinshasa) and the mineral-rich Shaba region.

VISITOR & TRAINING PROGRAMS

The Bureau of Reclamation conducts visitor and training programs in the United States for engineers, scientists, and administrators at the request of foreign governments and/or sponsoring agencies i.e., AID, World Bank. Each program is individually tailored for a specific individual and is considered on-the-job training rather than a formal course. The Bureau provides training programs varying in length from several weeks to as long as a year for about 50 participants. The reimbursable costs for these programs are about $350,000 annually. Visitor programs for about 250-300 participants, lasting from 1 to 3 days, cost the Bureau about $50,000 and are not reimbursable.

FY1986 Foreign Travel Budget

Project or Category of Travel	FY86 Budget (in $1000's).
China	60
Ecuador	6
Egypt	40
Israel	8
Malaysia	60
Morocco	26
Pakistan	35
Saudi Arabia	26.5
Somalia	60
Spain	45
Zaire	12
Short-term assignments	175 (e.g., 35 TDY's annually)
Reimbursable subtotal	553.5
Nonreimbursable	65
Total (Reimbursable and Nonreimbursable)	618.5

The Bureau receives about 35 requests annually to provide technical assistance to foreign government agencies and international lending institutions such as the Agency for International Development, the World Bank, and the United Nations. These requests generally require a technical expert to visit a foreign country for a period of 2 to 4 weeks to assess problems and suggest solutions. All of this type of travel is fully reimbursable to the Bureau.

In support of our overseas teams and projects we send technical experts to foreign countries to review and discuss ongoing work with the resident team regarding specific areas of expertise (e.g., dam design, economic evaluation, land classification, construction activities). These are generally 2 to 4 month assignments on subjects that do not require full-time personnel. This work is fully reimbursable to the Bureau.

An effort is made annually for a senior staff member to visit each of our overseas teams in order to discuss problems and progress with senior foreign government officials and the Bureau team members and their families. In almost all of these cases the funds are budgeted and reimbursable under the project agreement.

Bureau personnel also attend international conferences in general areas (e.g., International Commission on Irrigation and Drainage, International Commission on Large Dams, and specific areas where the participant has considerable expertise). These conferences are generally technical in nature and provide for an exchange of information and problem solving. Where the Bureau has an ongoing program in the conference topic, the costs are charged to the project. Where no project funds are available, General Administrative Expense funds are utilized.

On several occasions during the year, staff members travel to foreign countries at the request of World Bank, etc. in order to ascertain whether the Bureau has the required expertise necessary to develop specific technical assistance programs. A portion of funding for this type of travel is provided through General Administrative Expense accounts.

COST SHARING

Mr. Watkins. Last year, you indicated that the Bureau's policy on cost sharing is consistent with your statement of policy included in the "Laxalt Letter" (from the President to Senator Laxalt). Is that still the Bureau's policy on cost sharing? Does the Bureau currently require the cost sharing of planning or feasibility studies and up-front financing of construction projects? What is the current Bureau policy on cost sharing and up-front financing? Do you maintain the flexibility indicated in the Laxalt letter?

Mr. Duvall. Yes. The Bureau regards the "Laxalt Letter" as the general policy governing cost sharing. The Bureau asks for its non-Federal partners to pay 50 percent of the cost of new plan formulation studies.

The Bureau does ask for a portion of the construction cost to be paid by its non-Federal partners during the construction period. In essence, we are asking for some non-Federal up-front financing to supplement Federal financing of the construction costs. The Bureau does maintain the flexibility indicated in the "Laxalt Letter." There is some variation among the agreements currently under negotiation.

TECHNICAL ASSISTANCE TO STATES

Mr. Watkins. Within your Technical Assistance to States program, how much funding is allocated to the state of Oklahoma in fiscal 1986? How is it being utilized? Within your budget request for fiscal 1987, what would be your allocation to Oklahoma? How do you plan to utilize these funds?

Mr. Duvall. In fiscal year 1986, $78,125 has been set aside for the State of Oklahoma. These funds are being used to complete an institutional analysis of irrigation water programs, do preliminary cost estimates on the alignment of a Miami pipeline, and evaluate water supply in the Kiamichi Basin.

In fiscal year 1987, about $115,000 has been set aside from Technical Assistance for the State of Oklahoma. These funds will be used to address priority assistance needs of the Oklahoma Water Resources Board and the several development associations working with the State. One area identified is assistance on water quality analyses.

TECHNOLOGY TRANSFER

Mr. Watkins. What is the Bureau doing to carry out the Stevenson-Wydler Technology Innovation Act? How much funding is allocated for technology transfer in fiscal 1986? How much funding have you programmed in fiscal 1987 for technology transfer? What do you intend to accomplish in both fiscal 1986 and 1987 in this area?

Mr. Duvall. Reclamation accomplishments on an annual basis include publication for wide distribution of about 50 research reports and professional papers, sponsoring five technical seminars and field demonstrations, and training activities both at the laboratory and at field offices. It also supports, through grants and contracts, several technical workshops and committees each year. For fiscal year 1986, Reclamation expects to commit $250,000 to technology transfer and for fiscal year 1987, it has estimated about $275,000.

Reclamation strongly supports technology transfer as defined in the Stevenson-Wydler Technology Innovation Act. While the size of its laboratory does not warrant an "Office of Research and Technical Applications," it conducts a variety of activities oriented toward transfer of technology.

Shoreline at Veterans Lake

Mr. Watkins. I understand that there is some controversy about who has responsibility for maintenance of the shoreline at Veterans Lake -- the Arbuckle Conservancy District, the Bureau of Reclamation, or the U.S. Park Service. Who maintains this responsibility? Please provide for the record a breakdown of the jurisdictions of the various agencies/organizations that have responsibilities for parts of the Veterans Lake project.

Mr. Hodel. The National Park Service has complete responsibility for Veterans Lake. Ownership was recently transferred by the City of Sulphur, which retained only a deed reservation to the use of the lake as a relay reservoir for domestic water use. Shoreline maintenance is the responsibility of the National Park Service.

NEW STARTS

Mr. Bevill. Mr. Secretary, I note that the FY 1987 budget contains no funds for new construction starts. Did you request any new starts from OMB?

Mr. Hodel. The budget submission to OMB did categorize the Belle Fourche Unit as a new start but work has been started in FY 1986.

Mr. Bevill. What projects are eligible for a new start in FY 1987?

Mr. Hodel. We do not have any authorized projects with prerequisites sufficiently completed to permit construction in FY 1987.

CENTRAL UTAH PROJECT

Mr. Bevill. Last year's Energy and Water Development Appropriation Act contained the following language regarding the Bonneville Unit of the Central Utah Project:

> "Provided further, that none of the funds made available by this Act for the Bonneville Unit of the Central Utah Project may further be obligated or expended for the award of new construction contracts or for land acquisition related to new contracts until a supplemental repayment contract for municipal and industrial water supplies, sufficient to recover all allocable reimbursable costs, plus interest, has been executed between the Secretary and the Central Utah Water Conservancy District and such contract has been submitted to the Congress and 100 days have elapsed:"

What is the status of the repayment contract issue?

Mr. Hodel. On November 26, 1985, the United States executed a $335 million supplemental repayment contract with the Central Utah Water Conservancy District. That executed contract was sent to the Congress on December 12, 1985. for a 100-day review.

Mr. Bevill. What is the status of the 100-day Congressional review?

Mr. Hodel. The 100-day period expires on March 21, 1986.

FLOOD DAMAGES TO BUREAU OF RECLAMATION PROJECTS

Mr. Bevill. Parts of the Western United States have been devastated in recent weeks by flooding, mudslides, etc. What has been the impact of the floods on Bureau projects?

Mr. Hodel. The greatest damage to Bureau facilities occurred at the Auburn cofferdam site. The washout of the cofferdam resulted in the loss of about half of the embankment. High water behind the dam caused extensive damage to the California State Highway 49 bridge and access roads. We are presently evaluating measures to make the remaining portion of the embankment safer, and estimate it will cost about $3 million. We expect that the State will proceed with repairs on Highway 49 and will bill us for the cost of that work. The preliminary cost estimate of the bridge and highway repair is $7 million. A slide also occurred at San Justo Reservoir, and we estimate $1.5 million will be needed to stabilize it. An estimated $1 - $2 million in damages occurred to other CVP facilities, including the Delta-Mendota Canal, Friant-Kern Canal, and the Foresthill Pipeline.

The mudslides at Boca and Stampede Dams will be cleaned up by the water users and the contractor, respectively. We have a contractor at Stampede working on the powerplant; and since the mudslide is considered an act of God, the contractor will need to seek restitution for that work from his insurance company. We are not certain if the Washoe County Water Conservation District will request an Emergency Fund loan for the cleanup work, which preliminary estimates put at $25,000 - $30,000.

The Hyrum-Mendon Canal damage will be repaired by the South Cache Water Users Association, and we expect they will request an Emergency Fund loan. Damage estimates will not be available until the canal and the area around the siphon dry out.

Funds for the work on the Boca mudslide, the CVP, and the Hyrum-Mendon Canal will likely come from the Emergency Fund. Funds for Auburn Project work will require a supplemental appropriation, but a final decision on the amount and timing of such a request will be made after complete damage estimates and repair schedules are developed.

WESTLANDS LOAN

Mr. Bevill. As you know, the Statement of the Managers accompanying the FY 1986 Energy and Water Development Appropriation Act directed certain actions regarding drainage problems in the Central Valley, California, affecting Kesterson Reservoir.

After being informed that your Solicitor has determined that you lack authority to make the loans referred to in the Statement of the Managers, I wrote you on February 7, 1986, requesting a fuller explanation of the determination that authority is lacking.

What is the status of the Kesterson studies, and have you made any determination regarding your authority as requested in my letter of February 7, 1986?

Mr. Hodel. On February 5, 1985, the California Water Resources Control Board issued an order (85-1) directing the Bureau of Reclamation to develop a plan within 150 days and complete cleanup within 3 years. A framework plan for the closure and cleanup of Kesterson Reservoir was submitted to the California Water Resources Control Board on July 5, 1985. A draft Environmental Impact Statement is scheduled for public release on April 18, 1986, and will include the alternative plans for Kesterson Reservoir, impacts of the alternative plans, and a comparison of the alternative plans. The final EIS is scheduled for release in September 1986 and the closure plan and post-closure maintenance plan will be submitted on December 1, 1986, to the State Water Resources Control Board. The closure and cleanup is scheduled to be accomplished by February 5, 1988, subject to the timely availability of funds.

The Solicitor of the Department of the Interior is preparing a response to your February 7, 1986 letter regarding authority to grant a $3.7 million loan. That response will be forwarded to you in the near future.

The Department of the Interior's Solicitor concluded that the Bureau of Reclamation does not have existing statutory authority to make the proposed loan. The Department of the Interior has drafted legislation which, if approved by the Congress, would authorize the Bureau to make a loan to the local government agency. The Bureau of Reclamation is prepared to make the loan to a local government agency when it has the statutory authority to do so.

Westlands Water District identified three studies to be undertaken with the $3.7 million Federal loan: 1) solar pond brine management; 2) desalting by reverse osmosis, and 3) disposal by deep-well injection. Two of these studies were already in progress at the time Westlands requested the Federal loan. The study of desalting by reverse osmosis recently completed by CH2M-Hill, under contract to the Bureau of Reclamation, concluded that this treatment alternative was not fianancially feasible. The deep-well injection disposal study by URS Corporation, under contract to the Bureau of Reclamation, is in the final report preparation stage. Westlands Water District, anticipating the granting of the Federal loan, has not used its own resources for further pursuit of the three studies.

NEW GENERAL INVESTIGATION STUDIES

Mr. Bevill. The FY 1987 budget includes funds for the initiation of four new investigations.

Describe each investigation and indicate why it was selected.

Mr. Duvall. The four new investigations are (1) Deschutes River Basin Water Storage Project, Oregon, (2) Upper Snake River Basin Storage Optimization, Idaho and Wyoming, (3) San Bernardino Valley Ground Water Project, California, and (4) South Platte River Operations study, Colorado.

The Deschutes River Basin Water Storage Project is in a prime recreation area renowned for its stream and reservoir fishery and outdoor recreation. The Deschutes River has experienced very low flows since development of irrigation projects at the turn of the century. An opportunity exists for reregulating storage reservoirs to meet desired minimum riverflows through lining of selected irrigation canals. Studies show extensive water savings opportunities are available through lining certain canals and laterals now experiencing large seepage losses. The salvaged water could be used to meet riverflow needs and regulate water levels at reservoirs, as well as firm up irrigation shortages.

Under the proposed investigation, a canal system of an irrigation district would be selected for study to determine the amount of water that could be salvaged through a canal lining program. Costs would be identified for lining selected sections of the canal, and impacts of linings on ground water would be evaluated. An allocation of saved water would be made among identified needs, with emphasis on meeting minimum flows established by the State of Oregon for the Deschutes River and for meeting supplemental irrigation needs for the irrigation district where the canal lining would take place.

The project was selected for the study on the basis of the needs to be addressed and the potential for resolving those needs. Non-Federal funds in the amount of 50 percent will be available to assist in the study, and the project has potential for up-front non-Federal construction funding.

The Upper Snake River Basin Storage Optimization study will evaluate the historical use of Bureau of Reclamation storage reservoirs in the upper Snake River basin, review the effect of hydrologic cycles on water use and storage capability, review the originally intended uses of the storage when it was placed under contract, and identify potentials for further optimization of the existing storage resource. A second objective of the study will be to provide updated information on Snake River storage potentials including water yields, cost, potential markets, and social and environmental effects.

The investigation's objectives are consistent with critical current State of Idaho concerns over irrigation, hydropower, Indian and reserved water rights, water right priorities, and the availability of water to meet those existing and identified future water needs in the upper basin. Reclamation's study would be one element of a multiparty effort to formulate an overall surface and ground water program for the basin. The Bureau of Reclamation, with 5 million acre-feet of storage, has a vital interest in participating jointly in this effort.

The study was selected on the basis of water rights controversies, and the need and potential for their resolution. There is strong State support for the study and no known opposition.

The San Bernardino Valley Ground Water Project study area is in San Bernardino County, California. The purpose of the study is to investigate high groundwater levels in the San Bernardino Valley and determine possible solutions and uses for the water.

The high groundwater levels in the San Bernardino Valley groundwater basin are causing basement flooding which increases the potential for liquefaction of ground in the city of San Bernardino in the event of an earthquake. The problem also affects the management of ground water in the Santa Ana River basin, which impacts water users in three southern California counties.

Reclamation will investigate alternative uses of the water including conveyance to known water deficient basins, sale of water to surrounding communities, and conveyance to agricultural users. Facilities could include a wellfield, pipelines, and spreading basins to percolate water into the ground. A plan for management of the entire groundwater basin, including the management of recharge, would be a part of the study.

The groundwater basin underlies a populous area of southern California. The damages from a high water table and the associated threat of aggravated damage from an earthquake in this area would affect many people and a regional transportation center. Beyond this, the groundwater basin is not being managed in an optimum way for water yield.

The study was selected on the basis of the severity of the problem and the strong local support and interest in the study. The Bureau can provide an important coordinating role as well as groundwater expertise in resolving problems beyond the capabilities of the local entities. The Santa Ana Watershed Project Authority will cost share 50 percent of the study.

The South Platte River Operations study area includes the entire South Platte River Basin in Colorado and involves existing Federal, State and private facilities. This study will be designed to review possibilities for increasing watershed yield through improved water management. Additional water is needed or better utilization of the existing supply is required to support growth of the Denver metropolitan area.

The existing Federal presence and need for involvement in resolving water issues/needs in the basin and the high level of State and local support for the investigation were the bases for selecting the study. The State of Colorado and numerous water users along the South Platte River are supportive of an investigation to increase water availability in the basin. Non-federal interests will cost share 50 percent of the study.

NEW ADVANCE PLANNING STUDIES

Mr. Bevill. Three new advance planning studies are proposed in the FY 1987 budget.

Describe each investigation and indicate why it was selected.

Mr. Duvall. The three new advance planning studies for fiscal year 1987 are (1) the Dirty Devil Unit, Utah, (2) the Yakima River Basin Water Enhancement Project, Washington, and (3) the Umatilla Basin Project, Oregon.

The Dirty Devil Unit, Utah, Colorado River Water Quality Improvement Program, is a potential project which would help control salinity of the Colorado River at or below 1972 levels as measured at three locations on the river. The Unit's preferred plan would reduce salt loading to the Colorado River by about 20,900 tons per year resulting in an annual benefit at Imperial Dam of 1.9 milligrams per liter. The plan involves collecting saline spring water, which presently enters fresher surface water, and disposing of it through deep well injection.

Salinity concentrations in the Lower Colorado River fluctuate annually with the overall basin water supply, often projected to reach serious levels for municipal, industrial, and agricultural use and would result in economic losses to the users of the Lower Colorado River waters. The construction of projects presently authorized and planned private developments on the entire basin will cause significant further increases in salinity concentrations in the Colorado River. Mexico has complained in the past of the damage that saline water causes the Mexican Colorado River water users. Dirty Devil investigations have identified a preferred plan. The cost effectiveness would be about $102 per ton based on January 1985 costs indexed to October 1986. Advance planning work will include refining data and preparation of designs needed as a prerequisite to construction.

This investigation was selected on the basis of the project's potential effectiveness in meeting salinity control goals.

Yakima River Basin Water Enhancement Project, Washington, advance planning activities will provide information to refine the preferred plan facilities and operation practices, particularly as related to the existing Yakima Reclamation Project. Environmental compliance activities will be completed. Repayment negotiations will be conducted, and potential sources of up-front financing and other cost-sharing and financing will be confirmed.

The project is being formulated to resolve competing water demands through a combination of non-storage and storage measures and through a basin operational and management plan. The alternative is extensive litigation which could be pursued by the Yakima Indian Nation under the 1855 treaty.

The investigation was selected on the basis of the project's feasibility to meet complex water basin needs. State and local support is strong.

The Umatilla Basin Project, Oregon, preferred plan is a fishery enhancement plan to restore salmon runs and to enhance steelhead runs in the Umatilla River Basin in response to Indian treaty fishery objectives. The plan's major feature is that of improving streamflows by "importing" water from the neighboring Columbia River.

Advance planning work will focus on refining preferred plan facilities and operation practices and on the collection of design data, further evaluation of designs and costs of the plan, completion of studies and activities related to environmental compliance, arrangements with the irrigation districts for the water exchange and use of facilities, negotiating sources of up-front financing and other cost sharing, and any other activities prerequisite to initiating construction.

There is general agreement among Indian and non-Indian water interests that expedient Federal action is required to provide the water necessary to restore Umatilla River salmon and steelhead runs. Failure to take such action would almost certainly result in a major legal confrontation and social, economic, and political conflict between Indian and non-Indian residents. Further, the capability of the existing Federal Umatilla Reclamation Project to meet its water supply commitments would be seriously affected should Federal court action require utilization of project water supplies to protect reserved treaty rights of the tribes.

This project was selected on the basis of its potential effectiveness in meeting needs and objectives, as well as on the basis of support from State and local interests.

COST SHARING

Mr. Bevill. In connection with the General Investigations program, the justification sheets indicate a "percentage of cost sharing" for each study. How is the local cost share determined?

Mr. Duvall. The Administration's policy for cost sharing in the General Investigations program is to require that non-Federal interests pay at least 50 percent of the study cost in either cash or in-kind services. Any non-Federal participation of less than 50 percent would need a Secretarial exception. Exceptions are granted on a case-by-case basis.

CENTRAL VALLEY FISH AND WILDLIFE MANAGEMENT STUDY, CALIFORNIA

Mr. Bevill. On page 23, I note $511,000 is programmed to complete the Central Valley Fish and Wildlife Management Study.

Will these studies focus on the fish and wildlife problems associated with Kesterson Reservoir?

Mr. Duvall. No, the Central Valley Fish and Wildlife Management Study will not focus on the fish and wildlife problems at Kesterson Reservoir. The focus of those problems is better handled under the San Joaquin Valley Drainage Program. However, coordination is being performed in order to maximize use of the data generated by both programs and to avoid duplication of effort.

COLORADO-BIG THOMPSON POWERPLANT

Mr. Bevill. Explain the decision to discontinue the study of the Colorado-Big Thompson Powerplant in Colorado.

Mr. Duvall. A public meeting was held on March 28, 1985, and attempts to obtain cost sharing were pursued. Minimal interest was expressed by utility companies and no financial commitment to share study costs was offered. Accordingly, with lack of local support and a non-Federal entity to cost share the study costs, the study was discontinued.

COLORADO RIVER WATER QUALITY IMPROVEMENT PROGRAM

Mr. Bevill. What type of alternative control plans are being developed in regard to the Colorado River Water Quality Improvement Program as shown on page 26?

Mr. Duvall. We are developing plans that will utilize a variety of salinity control measures depending on the particular situation under study. We are attempting to develop plans that will reduce the salinity levels in the most cost effective manner. Some of the salinity control measures that have been used and are under consideration include: the beneficial use of the saline waters in lieu of fresh waters; improving irrigation efficiencies by lining canals and laterals both on and off the farm; providing technical and educational assistance for more efficient irrigation water management; collection and treatment of irrigation return flows; removing salt from localized areas such as mineral springs, abandoned oil wells, and geysers; improved watershed management; deep well injection; lined evaporation ponds; and ground water barriers and detention basins. Regardless of the measures used, each plan will also receive careful review and consideration for the conservation and enhancement of fish and wildlife and its habitat.

Mr. Bevill. How do you plan to coordinate the Bureau's delivery system for the Uinta Basin Unit, Utah, with the SCS salinity control irrigation program which is under construction in the Basin?

Mr. Duvall. Coordination on the Uinta Basin Unit will be accomplished in the same manner that has been used on other units of the Colorado River Water Quality Improvement Program. The coordination is formalized through a series of joint agreements executed at the Cabinet and agency level. These agreements are carried out through several committees that have been established for that purpose. In response to concerns raised by the Colorado River Basin Salinity Control Forum and the mandate contained in the amendatory legislation of the Colorado River Salinity Control Program, the Department of the Interior and the Department of Agriculture (USDA) formed a Technical Policy Coordination Committee in 1985 to improve coordination of the salinity control program. The committee is comprised of representatives of the Bureau of Reclamation and the Soil Conservation Service (SCS). The Bureau of Reclamation is also represented on the USDA Salinity Coordinating Committee that reviews the work and program of the Bureau of Reclamation plus the work of all the USDA agencies involved in the Colorado River Basin Salinity Program. Another significant coordination accomplishment during fiscal year

1985 was the establishment of a USDA Basin Coordinator position in the Bureau of Reclamation's Colorado River Water Quality Office in Denver. In addition to serving as the primary point of contact with the Bureau, the incumbent in this position is responsible for coordination and evaluation of USDA salinity control activities in the Basin and for providing program assistance for the seven Basin State Conservationists of SCS.

CENTRAL VALLEY PROJECT, CROSS DELTA INVESTIGATION, CALIFORNIA

Mr. Bevill. $500,000 is programmed in FY 1986 for the Cross Delta investigation in California. Why are no funds requested for the study in FY 1987?

Mr. Duvall. Due to budget constraints and delays in implementing the Coordinated Operating Agreement, additional funds were not included in the fiscal year 1987 budget request. However, some work may be performed in fiscal year 1987 under Technical Assistance to States in conjunction with State activities.

DEEP CARBONATE AQUIFER PROJECT, NEVADA

Mr. Bevill. Explain the $3.5 million cost increase for the Deep Carbonate Aquifer Project, Nevada.

Mr. Duvall. The increased cost is due to the need for drilling and testing of additional exploratory wells that were not anticipated in the original estimate. The original scope of the investigation assumed that one exploratory well would be adequate to establish the location, capacity, and long-term yield of a deep carbonate wellfield. However, latest study data indicate that one well would not be a reliable indicator of capacity and that pump testing from only one well would not adequately stress the carbonate aquifer to measure and analyze the potential impacts of existing water rights of other aquifers.

FLAMING GORGE-COLORADO RIVER STORAGE PROJECT (CRSP) POWER PEAKING CAPACITY

Mr. Bevill. I note you are resuming the Flaming Gorge-CRSP Power Peaking Capacity study in Utah with a budget request of $300,000 in FY 1987. Why are no funds programmed for the study in FY 1986?

Mr. Duvall. The Flaming Gorge Unit is an on-going investigation. Data collection on environmental and water quality studies continues in fiscal year 1986. However, most investigatory work has been delayed until the completion of an operation and maintenance study on the uprating and rewinding of existing generators. Accordingly, funds were not programmed for the investigation in fiscal year 1986.

GALLUP-NAVAJO INDIAN WATER SUPPLY PROJECT

Mr. Bevill. In connection with the Gallup-Navajo Indian Water Supply Project, New Mexico, the justifications state that the local sponsors have not indicated an interest in cost sharing. You are planning to spend $200,000 on this study in FY 1986. What will be done with the information obtained as a result of the study?

Mr. Duvall. We will prepare the designs and cost estimates of alternatives to deliver water from the San Juan River to serve communities along the eastern part of the Navajo Nation, the city of Gallup, and utility companies. Results of this study will be presented in a technical memorandum and furnished to the Tribe, the city of Gallup, utility companies, and the congressional delegation.

GROUNDWATER RECHARGE DEMONSTRATION PROGRAM

Mr. Bevill. Last year's conference report accompanying the FY 1986 Energy and Water Development Appropriation Bill directed that the Scottsdale, Arizona, area be included under the Phase 1 provisions of the Groundwater Recharge Demonstration Program.

What have you done in response to the language in the conference report?

Mr. Duvall. The Bureau of Reclamation (Bureau) has been working with the State of Arizona, and other Western States, to implement the Groundwater Recharge Demonstration Program. The State of Arizona is aware of the language in the conference report accompanying the FY 1986 Energy and Water Development Appropriation Act regarding the Scottsdale area.

The authorizing legislation (P. L. 98-434) specifies a number of considerations to be included in the program and in each site proposal. The plan for the demonstration projects is to be developed in consultation with the States and other Federal agencies and the Act states in part that "the Bureau shall make maximum use of data, planning studies and other technical resources and assistance available from State and local entities." To facilitate such non-Federal involvement, the Groundwater Recharge Demonstration Program will be based on project proposals developed by non-Federal entities and submitted to the Bureau through the Governors' offices. Accordingly, we expect to be able to select from those project proposals which not only meet the requirements of the law but also exhibit the local and State support indispensable to the successful accomplishment of the recharge demonstration program.

HIGH MOUNTAIN AQUIFER STUDY, COLORADO

Mr. Bevill. What is the status of the High Mountain Aquifer Study, Colorado?

Mr. Duvall. A contract has been executed with a private entity, the Cory Company, Inc., to share equally in the cost of the study, and test site selection criteria is being developed. As soon as a test site is selected, appropriate permits will be obtained, base line environmental data will be collected, the test well and observation wells will be installed, and streamflow and water level data will be collected. Testing of the site will be initiated in fiscal year 1987 and monitoring activities will begin. Evaluation of the remaining 35 sites will begin in fiscal year 1987.

IMPERIAL IRRIGATION DISTRICT CANAL LINING AND SYSTEM IMPROVEMENT, CALIFORNIA

Mr. Bevill. On page 60 you indicate that a cost-sharing agreement between Reclamation and the Imperial Irrigation District regarding the Imperial Irrigation District Canal Lining and System Improvement study was finalized in FY 1985. What are the terms of the agreement?

Mr. Duvall. The Imperial Irrigation District has signed an agreement to share study costs on a 50/50 basis with Reclamation. The Districts contribution will be in the form of cash and in-kind services. The District will provide installation of instrumentation and collection of data.

INVESTIGATIONS OF EXISTING PROJECTS

Mr. Bevill. Why is it necessary to increase the FY 1987 request for Investigation of Existing Projects to $555,000 from a level of $200,000 in FY 1986?

Mr. Duvall. A number of new Rehabilitation and Betterment studies will be begun in fiscal year 1987 as well as existing ones continued and/or completed. These studies are needed to determine what measures are required to correct problems that have been identified at existing projects built by Reclamation. Also, because many facilities constructed by Reclamation have been in operation since early in the history of the Bureau, conditions often develop which cannot be foreseen far in advance but need prompt remedial action. Funds will be utilized for studies of that nature on existing Reclamation projects.

New studies that will begin in fiscal year 1987 will be for the Florida Project in Colorado; the Ogden River Project in Utah; the Hyrum Project in Utah; the Paonia Project in Colorado; and the North Platte Project, Pathfinder Dam, in Wyoming. Coordination also will continue on numerous other projects.

MESA-DELTA M&I GROUND WATER STUDY

Mr. Bevill. Explain the hydroelectric potential being studied as part of the Mesa-Delta M&I Ground Water Study.

Mr. Duvall. The mesa under study is about 10,000 feet in elevation, the surrounding valley floor is about 4,500 feet in elevation. Therefore, there is a potential of about 5,500 feet of pressure head to produce power from the top of the mesa down to the communities located in the valley. The Mesa-Delta M&I Ground Water Study is being conducted to evaluate availability of water resources. After this evaluation has been completed, alternatives will be evaluated to determine what uses these resources could be applied to, including potential for hydroelectric power development.

NORTH SIDE EXTENSION, MINIDOKA PROJECT, IDAHO

Mr. Bevill. What is the significance of the statement on page 69, "This project has potential for up-front non-Federal construction funding?"

Mr. Duvall. Implementation of this project would complete development of the North Side Pumping Division which was begun about 30 years ago. Approximately 17,000 acres of Federal land remain in a withdrawn status by Reclamation. The irrigable lands would be purchased by eligible landowners through a drawing. In addition to the appraised value of the land, each purchaser would pay an additional amount (about $100 per acre) which would be used as a project construction fee. This fee would provide about $800,000 for up-front funding assistance. In addition, the irrigation district is interested in constructing some of the project features, which would reduce the need for outside contractors and lower the total project cost (total estimated construction cost is about $16 million.)

PIMA COUNTY/SANTA CRUZ RIVER GROUND WATER PROJECT, ARIZONA

Mr. Bevill. The FY 1986 Energy and Water Development Appropriation Bill provided $100,000 to initiate the Pima County/Santa Cruz ground water project investigation. How are the funds being used and what work is planned in FY 1987?

Mr. Duvall. The plan of study is being developed. Efforts during fiscal year 1986 will include coordination with local and Federal agencies, assessment of current water quality standards for reclaimed effluent, evaluation of the economic feasibility of treating water by recharge, and monitoring the results of the demonstration project that will be conducted by the city of Tucson for cost and quality of water.

Fiscal year 1987 activities will include site investigations of potential infiltration sites, field testing of potential infiltration methods, initiation of appraisal level designs, and initiation of fish and wildlife coordination activities.

SEMINOE DAM MODIFICATION, WYOMING

Mr. Bevill. Last year's House Report directed the Bureau to analyze the potential of enlarging Seminoe Dam in Wyoming. What is the status of the study?

Mr. Duvall. The plan of study has been completed and a "Notice of Initiation of Investigation" has been issued. Fiscal year 1986 activities will include compilation of basic engineering, environmental, economic, and hydrologic data and include public input to the study. Flood control, fish and wildlife, and recreation enhancement benefits will be estimated. This data will be used to formulate plans for the modification. An estimate of the municipal and industrial storage cost is scheduled to be provided to the State of Wyoming by January 1987.

ATMOSPHERIC WATER RESOURCES MANAGEMENT PROGRAM

Mr. Bevill. The House Report accompanying the FY 1986 Energy and Water Development Appropriation Bill provided $600,000 for the Southwest Cooperative Operational Demonstration Program-Southwest Drought Rain Augmentation Research and $500,000 to continue the university research grant related to cloud seeding and pilot training. How were those funds utilized and what follow-on work is planned in FY 1987?

Mr. Duvall. The $600,000 is being used to fund cooperative agreements with the Texas Water Commission and the Oklahoma Water Resources Board to share costs for incorporating cloud seeding into State water plans. The agreements support a test of existing cloud seeding technology for enhancing precipitation from summer convective clouds and its feasibility as an alternative resource to augment the declining water supplies of west Texas and Oklahoma, as well as other semi-arid areas. Specifically, the cooperative agreement with Texas provides an additional cloud seeding aircraft, a weather radar set, and other instruments, as well as support for an evaluation of seeding effects on cumulus clouds. The cooperative agreement with Oklahoma supports long-range planning and limited field studies in western Oklahoma for a State-supported program of operational cloud seeding.

A $500,000 amendment has been awarded to the existing research grant with the University of North Dakota which will enable the University to continue research studies in cooperation with the State of North Dakota's operational cloud seeding program to help to improve and assess seeding effectiveness and to continue the weather modification pilot training.

Budgetary constraints precluded funding for both activities in FY 1987.

GROUNDWATER RECHARGE DEMONSTRATION PROGRAM

Mr. Bevill. What is the status of the High Plains States Groundwater Demonstration Program?

Mr. Duvall. The Program was officially initiated in December 1985. In October 1985, a workshop was conducted to introduce State representatives and staff from Reclamation, Geological Survey, and Environmental Protection Agency to the concepts and strategies of the program. Additional information requested by the States on the proposal development portion of Phase I, a non-Federal activity, was prepared and transmitted. Currently, States and other non-Federal entities are preparing site nomination proposals to be submitted to Reclamation by the Governors of each of the 17 Reclamation States by July 1, 1986. A letter report on the status of program activities, as mandated by the law, will be prepared at the 6-month mark and transmitted to Congress.

Site nomination proposals will be evaluated by the Bureau of Reclamation and the U.S. Geological Survey with assistance, as appropriate, from the Environmental Protection Agency. A report from the Secretary of the Interior will present to the Congress recommendations for construction during Phase II. That Secretarial report will be transmitted at the end of the 24-month Phase I planning period.

APPROPRIATION CEILING

Mr. Bevill. As shown on page 140, there are nine projects that will require legislation to increase appropriation ceilings before they can be completed as authorized. What are these projects and when will the legislation be submitted to Congress?

Mr. Duvall. We will provide that information for the record:
(The information follows:)

PROJECTS REQUIRING INCREASED APPROPRIATION CEILINGS

Project	Legislation Needed:
Central Valley Project:	
Auburn-Folsom South Unit	Project on hold pending study.
San Luis Unit (Distribution System and Drains)	FY 1987. Legislation needed to continue the San Joaquin Valley Drainage Program and the study for the cleanup of Kesterson Reservoir.
Trinity River Restoration 1/	Project reevaluated.
Chief Joseph Dam Project, Oroville-Tonasket Unit	FY 1988.
Colorado River Basin Salinity Control, Title II Division	FY 1992.
Pick-Sloan Missouri Basin Program:	
Garrison Diversion Unit	Congress is currently considering new legislation.
North Loup Division	FY 1987. Legislation introduced in both houses of Congress in 1985.
O'Neill Unit	All work but preconstruction directed by the Congress ceased pending project redesign. New ceiling to be established.
Colorado River Storage Project	FY 1991.
Washoe Project	After FY 1992.

1/ Site of Grass Valley Creek Debris Dam was changed and the new estimated total cost for this program is within the current appropriation ceiling.

SPRING CREEK TOXICITY PROGRAM

Mr. Bevill. What is the purpose of the Spring Creek Toxicity Program in California for which you are requesting $20,000 in FY 1987? Why is the Bureau involved in this effort? (p. 168)

Mr. Duvall. Acid and heavy metal pollution in the Upper Sacramento River originates primarily in the Spring Creek Basin as the result of historic mining activities. Investigations by the Bureau of Reclamation resulted in a proposed two-stage solution to the Spring Creek Toxicity problem which includes source control and water management. The remedial action alternatives being identified by the Bureau and the U.S. Environmental Protection Agency will consist of a combination of source control, treatment, and water management actions.

It is the policy of the Bureau that the costs of this work should be borne by those causing the pollution problem. We are currently discussing with the U.S. Environmental Protection Agency cost recovery actions provided under the Superfund law.

The Bureau of Reclamation is involved because of the existing Bureau facilities and remedial actions will likely affect the operation of the Central Valley Project.

TITLE I DIVISION

Mr. Bevill. With regard to the Colorado River Basin Salinity Control Program, what enabled you to shorten the completion date of the desalting complex by one year?

Mr. Duvall. In FY 1985 favorable bids were received on the last major contract for the desalting complex thus making funds available for other work. Other smaller contracts were awarded earlier than scheduled, which has made it possible to complete the project 1 year earlier.

KESTERSON RESERVOIR

Mr. Bevill. In connection with the San Luis Unit, California, I note that $11.5 million is requested to continue the studies related to contaminants found in Kesterson Reservoir.

What is the status of these studies?

Mr. Duvall. Of the $11.5 million requested for the San Luis Unit in Fiscal Year 1987, $4,032,000 is anticipated for use in the planning activities for the Kesterson Reservoir cleanup. Specific activities include $1.3 million for continuation of on-going monitoring efforts; $1.5 million for the Bureau of Reclamation for post-closure maintenance of the San Luis Drain and Kesterson Reservoir, minor construction of dikes to isolate specific areas for further studies by the Lawrence Berkeley Labs, continued public involvement, and completion of the Environmental Impact Statement and the final cleanup plan; $752,000 for improving security measures at the reservoir and reducing wildlife exposure; $205,000 for study activities and preparation and printing of the final plan to be presented to the State Water Resources Control Board; $200,000 for continuation of the Lawrence Berkeley Lab contract for determining the movement of contaminants; and $75,000 for the continuation of the Small Mammal Foodchain Toxicology Study.

The remainder of the funds ($7,468,000) is designated for use by the inter-agency long-term San Joaquin Valley Drainage Program. In summary, $2.5 million would be provided to the U.S. Fish & Wildlife Service for determining the safe levels of contaminants for biological resources and $2.78 million would be provided to the U.S. Geological Survey to determine existing and the prediction of future quantity and quality of drainage water and its distribution. The remaining $2.2 million would be used directly by the Bureau of Reclamation for investigations of treatment and disposal alternatives; continued data collection and analysis; and the development of alternative plans, including source control, to maintain safe levels of trace elements in surface and ground water in the project area.

Mr. Bevill. Have any preliminary conclusions been reached as to a permanent solution to the problem?

Mr. Duvall. The Bureau of Reclamation is in the process of developing alternatives and preliminary cost estimates for the cleanup of Kesterson Reservoir.

Mr. Bevill. Explain the use of Sec. 201 of the FY 1985 appropriation act to increase the appropriation ceiling for the project.

Mr. Duvall. Section 201 of the General Provisions of the FY 1985 Appropriation Act gives the Secretary authority to utilize available funds in an emergency situation. Under this authority, $7 million was transferred to the San Luis Unit for studies and interim corrective measures in the San Joaquin Valley. It has been determined that the exercise of authority of Section 201 to respond to an emergency situation is also sufficient authority to increase the appropriation ceiling.

SAN FELIPE DIVISION

Mr. Bevill. With regard to the San Felipe Division, California project, you state on page 217 that the system to serve the Watsonville subarea had been deleted.

Why are you now restudying the area?

Mr. Duvall. The Watsonville Subarea, consisting of portions of Santa Cruz and Monterey Counties, and including the City of Watsonville, is part of the authorized San Felipe Division of the Central Valley Project. Santa Cruz and Monterey Counties were not ready to enter into water service contracts in the early 1970's, so the Watsonville subarea was "tentatively" deleted, as stated in the document, pending a further decision by the local agencies. In 1983 local interests requested a study to be done to determine options for providing San Felipe water to the Watsonville subarea.

Mr. Bevill. Will local interests bear any of the costs of the study?

Mr. Duvall. The local agencies to date have not contributed to the study. However, a new water agency has recently been formed and the Bureau is working with them on this issue.

TRINITY RIVER RESTORATION PROGRAM

Mr. Bevill. Describe the Trinity River Restoration Program, California, for which $4,650,000 is requested in FY 1987. (p. 222)

Mr. Duvall. The Trinity River Restoration Program is a three-part program to restore the fish and wildlife resources in the Trinity River Basin to levels prior to the construction of Trinity River Division facilities. The program consists of modernization of the Trinity River fish hatchery, construction of a debris dam and sand dredging system in Grass Valley Creek, and the Trinity River Basin Fish and Wildlife Management program.

In FY 1987, a contract will be awarded for Phase I of the Trinity River fish hatchery modernization. Measures to restore fish and wildlife habitat in the main Trinity River above Grass Valley Creek, the South Fork and various tributaries will continue. Although only preconstruction work was earlier contemplated for the Grass Valley Creek debris dam, it is now possible to award a contract to construct an access road in FY 1987. It is necessary to start construction of the access road in FY 1987 to avoid delay of construction of the debris dam.

GRAND VALLEY UNIT LATERALS

Mr. Bevill. In connection with the Grand Valley Unit, Colorado, explain the decision to place lateral systems in pipe instead of open lined laterals resulting in a cost increase of $31,043,000. (p. 242)

Mr. Duvall. A cost-effectiveness analysis of a closed-lateral system versus an open-concrete system revealed that the pipe system was more effective. The capital costs are higher for the pipe system, but due to higher operation and maintenance costs for the open concrete system -- costs which the government must reimburse the water users (Public Law 98-569) -- annual costs for the pipe systems are lower. There is also a slight salinity reduction benefit for the pipe system.

O'NEILL UNIT P-SMBP - LEGISLATION

Mr. Bevill. What is the status of legislation to modify the existing O'Neill Unit authorization? (p. 270) How will budgeted funds of $1,381,000 be used?

Mr. Duvall. Legislation has been introduced in the House and Senate (H.R. 1590 and S. 671) to modify the existing O'Neill Unit authorization. The subcommittee on Water and Power Resources, House Interior Affairs Committee, held hearings on H.R. 1590 in April 1985 and made substantial amendments to that bill. The amended bill is awaiting full committee action.

The FY 1987 budget request of $1,381,000, consists of approximately $590,000 to continue the ground water recharge verification studies and $791,000 to award a contract to collect design data, design facilities, and compile construction specifications. However, such design and specifications work cannot proceed without new legislation for the O'Neill Unit.

LAS VEGAS WASH UNIT, CRBSCP

Mr. Bevill. Explain the alternative strategy to prevent the formation of brackish salt water in connection with Las Vegas Wash Unit in Nevada. (p. 274.)

Mr. Duvall. We are considering four alternative solutions for salinity control in the Las Vegas Wash. In addition to a no action plan, ground-water collection would dispose of intercepted and collected ground water by evaporation ponds and possibly a desalting plant. Ground water prevention would collect relatively fresh waste water in pipelines or lined channels for discharge directly into the wash. This plan would prevent seepage from leaching native salt deposits and the subsequent formation of brackish ground water and its inflow to the wash. Ground water flow reduction includes construction of subsurface slurry walls to impede ground water inflow to the wash, thereby reducing the leaching rate.

OROVILLE-TONASKET UNIT

Mr. Bevill. You show an increased cost of $2 million in the cost of the Oroville-Tonasket Unit of the Chief Joseph Dam Project due to excess sediment entering the distribution system. What caused the problem and what are you doing to correct the problem?

Mr. Duvall. The amount and/or the type of sedimentation in the river was underestimated in the planning stage of the project. Although the river pumps were designed with separators to remove some sediment, excessive amounts were still entering the distribution system. To correct this problem, rock filters have been added to pump inlet screens, modifications have been made to regulating reservoirs to allow the sediment to settle out before entering the pipe systems, and additional screening with finer mesh material has been added to the outlets to prevent vegetative matter entering the system. If these measures do not solve the problem, installation of dual pipelines at the Bonaparte and Ellisford pumping plants may be required.

COLUMBIA BASIN PROJECT

Mr. Bevill. What is the basis for the decrease of $248 million in the irrigation feature of the Columbia Basin Project?

Mr. Duvall. The revised estimate for the Columbia Basin Irrigation features reflects increased detailed planning for the completion of the remainder of the project. A revised plan of development for the remainder of the project has eliminated some features. In addition, recent cost trends for construction of drainage facilities have been lower than when earlier estimates were made.

Mr. Bevill. The House Report accompanying the FY 1986 Energy and Water Development Appropriation Bill directed funding of the Wahatis Wasteway as a part of the Columbia Basin Project. What action has been taken in response to the committee directive?

Mr. Duvall. The designs and specifications for Wahatis Wasteway have been essentially completed. Award of the contract is scheduled for July 1986.

YAKIMA FISH PASSAGE AND PROTECTIVE FACILITIES

Mr. Bevill. Explain the $9 million increase in fish and wildlife benefits in connection with Yakima Fish Passage and Protective Facilities, Washington.

Mr. Duvall. As the construction of the initial features and preconstruction activity on the remaining features at the various sites are completed the estimated cost of the facilities are refined. The cost increase of $9 million is primarily related to the following: Contract overruns on Wapato and Sunnyside fish ladders; addition of an adult fish trap, a juvenile trapping and tagging facility at Prosser to facilitate program management; increased modifications at the Prosser fish ladders; need to locate the Roza fish screens in the forebay because of their size increased the cost of the associated cofferdam and sediment removal; increased size of the Town canal screens due to incorrect initial diversion assumptions; addition of permanent operating facilities which were not included in the initial estimate.

AINSWORTH UNIT

Mr. Bevill. Describe the work planned in regard to the Ainsworth Unit, Nebraska, project under the Drainage and Minor Construction Program. (p. 367)

Mr. Duvall. In FY 1987, a construction contract will be awarded to correct minor seepage in the left abutment of Merritt Dam. The downstream slope of the dam will be cleared off and covered with a gravel blanket to facilitate the operation of the horizontal drainage wells.

SALT RIVER SAFETY OF DAMS

Mr. Bevill. The Conference Report on the FY 86 Energy and Water Development Appropriations Bill directed that construction activities commence on two Salt River dams as part of the Safety of Dams Program. What is the status of the work? What funds are budgeted in FY 87 to continue the work?

Mr. Duvall. The two Salt River dams covered by the Conference Report and included in our fiscal year 1987 budget request for the Safety of Dams Program include Modified Roosevelt and Stewart Mountain Dams.

The total estimate for Modified Roosevelt Dam is $11.3 million. The safety of dams portion is $1.1 million and the Central Arizona Project's portion is $10.2 million. Two contracts will be awarded in FY 1987 to relocate Highway 88 and the Highway 188 bridge prior to construction of the dam modifications.

The Stewart Mountain Dam program in FY 1987 is $2.3 million. These funds will enable work to continue on geologic exploration, exploratory drilling and design data collection. Partial excavation of the new auxiliary spillway and relocation of Salt River Project and Maricopa County facilities will be accomplished.

CONSTRUCTION PROGRAM - SAFETY OF DAMS

Mr. Bevill. On page 377 you list potential candidate projects under the Safety of Dams program. Do you plan to revise the list as a result of the recent floods in the West?

Mr. Duvall. We do not plan to revise the list of potential candidate projects under the Safety of Dams program since all of Reclamation's permanent facilities operated satisfactorily.

Many of the storms which produced the western flooding were indeed large and unusual events. In future analysis under the Safety Evaluation of Existing Dams activity we will be assessing the impact of those storms upon the hydrologic record. Through that activity, we conduct periodic evaluations of the current data for hydrologic and seismic criteria for dam safety and identify the need for corrective action.

JENSEN UNIT, CUP

Mr. Bevill. The Jensen Unit, Utah, will be added to the Drainage and Minor Construction Program under the Upper Colorado River Basin Fund in FY 1987. What work is planned in FY 1987?

Mr. Duvall. Construction is scheduled to be completed on the Supervisory Control System. This will complete the Jensen Unit except for those items which have been delayed until the demand develops for additional project water.

RECREATIONAL AND FISH AND WILDLIFE FACILITIES

Mr. Bevill. What is the reason for the $3.8 million increase in recreational and fish and wildlife facilities at the Dallas Creek, Colorado, project as shown on page 446?

Mr. Duvall. The increase of $3,845,000 on Dallas Creek recreational and fish and wildlife facilities is due to:

Increase in quantities and extra work on the ongoing Ridgeway Dam contract, +$1,852,000; a new estimate for recreation facilities at Ridgway Reservoir with an increase in quantities and additional work items not included in earlier estimates, +$2,146,000; indexing, +$373,000; offset by a reduction in estimated costs to supervise contracts, -$526,000.

SEEDSKADEE PROJECT

Mr. Bevill. The Administrative Provisions request language to authorize the reallocation of project costs for the Seedskadee Project to reflect revised benefits. Why is that language needed?

Mr. Duvall. We have decided to withdraw the Seedskadee Project cost allocation language. At the time of preparation of the FY 1987 budget documents, we intended to recommend the distribution of the Fontenelle Dam modification costs in accordance with a new cost allocation of the project construction costs. The new allocation would recognize the addition of a powerplant and power benefits to the original project design.

We have experienced delays in preparation of the modification report for Fontenelle Dam. All alternatives for corrective action have not yet been fully analyzed and final selection may affect the cost allocation or potentially the project authorization. Consideration of the cost allocation problem is therefore premature at this time.

OPERATION AND MAINTENANCE

Mr. Bevill. The justifications indicate a reduction of $5.7 million in the Operation and Maintenance program in FY 1986 due to P.L. 99-177. What impact will the reduction have on the maintenance of Bureau projects?

Mr. Duvall. The reduction in funds will require that we postpone work on some of the less critical maintenance activities.

Mr. Bevill. Describe the work planned at Hoover Dam regarding the placement of air slots. Why is this work necessary? (p. 485)

Mr. Duvall. The placement of airslots in the spillway tunnels at Hoover Dam is essential in order to prevent them from eroding to the point where extensive structural damage could result if we should have high flows similar to those experienced on the Colorado River during 1983.

Mr. Bevill. The justifications also address the replacement of needle valves at 20 Reclamation dams. Why is this necessary and what is the cost?

Mr. Duvall. There are 46 needle valves that must be replaced or made inoperative at 19 dams on Reclamation projects. Several have two or more needle valves, and the valves range from 20 to 67 years in age. In recent years there have been some needle valve failures at non-Reclamation dams that caused the death of operating personnel. About 2 years ago, the operator was killed in an accident at Bartlett Dam on the Salt River Project in Arizona. A more modern type of gate (jet flow) will replace the old needle valves. We estimate that the purchase cost of the 46 valves will be $5 million and the installation costs will be an additional $5 million. The contracting entities will pay their allotted share of the total costs of the replacements at dams serving them.

Mr. Bevill. I note the Brantley Project will require $130,000 in Operation and Maintenance funds. Are local interests sharing in the cost of operation and maintenance? (p. 486)

Mr. Duvall. The contracting beneficiaries will pay their allotted portion of the operation and maintenance costs. The prorated costs allotted to flood control, fish and wildlife, and recreation enhancement are non-reimbursable.

Mr. Bevill. In connection with the Minidoka Project, you are replacing transformers containing PCB's at a cost of $37,000. (p. 115). Is there a requirement Bureauwide to make similar replacements?

Mr. Duvall. All of our regional offices have programs in effect to reduce the amount of PCB (Polychlorinated Biphenyls) containing equipment that they have in service. Based on our records in FY 1985, we had in service 547 capacitors and 213 transformers of PCB containing equipment. At the beginning of FY 1986, over 100 capacitors and 158 transformers had been removed from service. Our policy is to replace the PCB equipment that we have in service as expeditiously as the O&M budget appropriation will permit.

Mr. Bevill. On page 529 regarding the Navajo Dam, no funds are being allocated in FY 1986. Why will you require $6.1 million in FY 1987?

Mr. Duvall. We need the funds to correct settlement and seepage problems that have developed at the dam. Erosion of core material in the foundation may occur along the joints and cracks near the embankment-abutment contact. Such erosion would cause piping and potential failure of the dam if not corrected soon.

The corrective work at the Navajo Dam is for safety of dams purposes. It was originally included as a new start in the FY 1986 Safety of Dams Program with construction scheduled to begin in April 1986. Subsequently, a preliminary determination has been made that the corrective action is more appropriately performed under the operations and maintenance program. The application of Safety of Dams Act authority to perform this work is under review. If there are any revisions in this program decision, we will so inform you.

Navajo Dam was constructed utilizing methods and procedures which we considered acceptable technology in the late 1950's, but changes in state-of-the-art for embankment dam design have occurred. The seepage problems which have developed at Navajo could have been prevented if the dam were built by today's standards.

The proposed modification, estimated to cost $12.3 million, consists of constructing a concrete diaphragm wall in the left abutment and a drainage tunnel in the right abutment.

LOAN PROGRAM

Mr. Bevill. Five loans will be completed and three new loans are budgeted for initiation in FY 1987. What is the backlog of pending loan applications?

Mr. Duvall. In addition to the new loans proposed in the FY 1987 budget we are reviewing five loan applications with a loan value of about $49 million. There are also about 28 applicants who have submitted notices of intents to file applications for loans which will be in excess of $400 million.

Mr. Bevill. What is the status of legislation increasing the appropriation ceiling and requiring repayment of loans at current interest rates?

Mr. Duvall. The Administration has submitted legislation requesting the Small Reclamation Projects Act be amended to accomplish these two objectives. Legislation to increase the appropriation ceiling has been reported out of the Senate Energy and Natural Resources Committee. Both the House and the Senate held hearings in July 1985 on bills to increase the ceiling.

EMERGENCY FUND

Mr. Bevill. What funds remain in the Emergency Fund for use in fiscal year 1986?

Mr. Duvall. At the present time, $457,000 remains available in the Emergency Fund. Congress appropriated $1 million for the Emergency Program in fiscal year 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation was required to reduce its Emergency Program allotments by $43,000. Also, $500,000 was transferred to the Weber River Project in Utah for work regarding the replacement of the needle valves at Echo Dam.

GENERAL ADMINISTRATIVE EXPENSES

Mr. Bevill. As shown on page 551, $2 million of your request is for major acquisitions of equipment, capital improvements, etc. What items are included in the request?

Mr. Duvall. Of the $2 million requested for major acquisitions, $700,000 is needed for completion of replacement of the central computer system and $1.3 million for implementation of office automation in the Commissioner's Office.

Mr. Bevill. Expand on the statement in the justifications that there is a 10% administrative expenditure reduction, i.e., the consolidation of two regional headquarters. (p.551)

. Mr. Duvall. Actions intended to result in a permanent 10% administrative expenditure reduction were taken in fiscal year 1986, including reducing administrative staff levels in all regional offices, consolidating two regional headquarters, and consolidating staff in the Commissioner's Office. The estimate for fiscal year 1986 includes the full amount of the anticipated savings, $4.9 million; the fiscal year 1987 estimate assumes these savings will be permanent.

Mr. Bevill. On page 553, in connection with Official Representation and Liaison, it refers to the Commissioner hosting dignitaries at official functions, etc. What funds are used for this purpose? How much in FY 1985 and estimated for FY 1986?

Mr. Duvall. The functional responsibilities carried out under the General Administrative Expenses program include administration of foreign activities which are carried out on a 100% reimbursable basis. In conjunction with these activities, the Commissioner is called upon to represent the Bureau as host to foreign ministers seeking the Bureau's technical expertise for water resource development in their countries. The funds are provided by the Secretary through the Department's special fund for this purpose, not to exceed $2,000 per year, and reimbursed to the Department from the GAE account.

The Bureau also participates, and occasionally serves as co-sponsor, in national and international expos and exhibitions on water resources development activities, such as the International Congress on Irrigation and Drainage, International Committee on Large Dams, and Hydropower '86 conference. In 1984, the Bureau maintained an exhibit at the Louisiana World Exposition (the Expo's theme was "Fresh Water as a Source of Life"). Costs of Bureau involvement vary greatly, from less than $10,000 for Hydropower '86 to over $400,000 (including salaries for staffing the exhibit) for the Louisiana World Expo.

WORKING CAPITAL FUND

Mr. Bevill. Last year's Energy and Water Development Appropriation Act established a Working Capital Fund in the Bureau. What has been your experience to date as to the efficiency and effectiveness of the fund?

Mr. Duvall. The Bureau requested that the Department of the Treasury establish a Working Capital Fund (WCF) for the Bureau in December 1985, in accordance with Section 205 of the General Provisions of the FY 1986 Energy and Water Appropriations Act. In FY 1986, work is underway to finalize and implement WCF operational procedures for the Bureau's computer center activities, drilling equipment fleet management, and aircraft services. Ultimately, capital equipment and improvements, engineering services, and centralized administrative activities provided to projects are anticipated to be included. As of March 1986, the Bureau does not have an operational record for the WCF. The fund is expected to serve as an efficient and equitable mechanism for providing services to projects.

Mr. Bevill. On page 561 you show revenues and obligations of $23,223,000 in the Fund in FY 1986. What is the source of these revenues and how were they used?

Mr. Duvall. In FY 1986, the Bureau's computer center activities, drilling program, and aircraft services will be brought under the fund. Revenues to the fund represent charges to projects and activities for utilization of these services, and are derived from project allotments. This is similar to the financing method used in the past, except the charges to projects from the distributive account are now shown separately in the budget. These charges do not represent an increase in project activity or requirements for additional appropriations. The revenues are from other accounts and are utilized by the WCF to provide the services.

Mr. Bevill. How will the $6.4 million requested in FY 1987 be used?

Mr. Duvall. In the early years of operation of the WCF, acquisition of new assets or replacement of obsolete ones may require appropriations because depreciation charges were not accumulated on existing assets in the past. The $6.4 million requested in the President's Fiscal Year 1987 Budget would continue acquisition of a computer aided design and drafting system (CADDS) to be used Bureauwide, bringing state-of-the-art technology to the engineering and design functions. Funding for this acquisition was included under the General Administrative Expenses account in prior years. Upon the authorization of the WCF, requests for future GAE funding for CADDS were deleted in anticipation of continued funding under the WCF.

REVENUES

Mr. Bevill. Provide for the record a list showing the total revenues generated by Bureau projects and programs indicating where the funds are deposited and how they are used.

Mr. Duvall. We will be pleased to provide that information for the record.

(The information follows:)

Bureau of Reclamation - Sources of Funds - Revenues
(In thousands of dollars)

The Reclamation Fund

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Reclamation Fund		
Direct Collections		
Power Revenues	325,154	3,510,370
Construction Repayments	34,543	577,266
Water Sales	32,515	515,853
Miscellaneous Revenues	24,689	187,357
Operation & Maintenance Repayments	109	85,681
Total Direct Collections	417,010	4,876,527
Accretions		
Mineral Leasing Act	435,224	4,288,688
Other	2,915	501,997
Total Accretions	438,139	4,790,665
Total Deposits	855,149	9,667,192

The Reclamation Fund is used to finance all activities of the Bureau except where otherwise provided for by law. All power revenues received from Bureau projects are deposited in the Reclamation Fund except those applicable to the Corps of Engineers and the following projects: Boulder Canyon, Colorado River Storage, and Colorado River Basin. Most of the accretions to the Reclamation Fund come from the leasing of public lands under the Mineral Leasing Act.

Upper Colorado River Basin Fund

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Upper Colorado River Basin Fund		
Electric - Reclamation	28,446	580,303
Electric - WAPA	109,132	489,821
Irrigation & M & I Assessment - Water Users	799	5,569
M & I Water	1,408	20,317
Repayment Contracts	1,471	10,507
Nonoperating Income	843	1,237
Total Revenues	142,099	1,107,754

The Upper Colorado River Basin Fund is a revolving fund for construction appropriations and revenues. All revenues are credited to the Basin Fund and are available without further appropriations for (1) operation, maintenance, and replacements costs, as well as emergency expenditures; (2) return of investment cost and payment of interest on the unamortized balance of the investment in the commercial power and municipal and industrial water supply features. Revenues in excess of the amounts needed to meet the foregoing requirements will be apportioned among the States of Colorado, Utah, Wyoming, and New Mexico, for repayment of participating projects wihtin those states.

Lower Colorado River Basin Development Fund

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Lower Colorado River Basin Development Fund		
Power Revenues	72,446	574,174
Water Revenues	812	812
Total Revenues	73,258	574,986

The Colorado River Basin Project Act provided for establishing a separate fund known as the Lower Colorado River Basin Development Fund (LCRBDF). All appropriations under the Act as well as all revenues collected are deposited in this fund. Most annual revenues are available without further appropriation for (1) paying the cost of operation, maintenance, and replacement expenses; and (2) return of investment cost and payment of interest on the unamortized balance of the investment in the commercial power and industrial water supply features.

Colorado River Dam Fund

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Colorado River Dam Fund		
Power Revenues	24,532	466,101

The Boulder Canyon Project Act established a special fund, the Colorado River Dam Fund (CRDF), for financing construction and authorized advances of $242 million from the Treasury to the Fund. Revenues are deposited into the CRDF and are available for operation and maintenance without further appropriation. The Funds needed to pay interest on the investment and to repay advances are paid or transferred from the CRDF into the General Fund of the Treasury.

Columbia Basin Land Development Program (CBLDP)

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Columbia Basin Land Development Program Sale & Lease of Settlement Land & Development Farms	430	16,850

Funds were appropriated from the Treasury General Fund to the CBLDP to cover the purchase of project lands for settlement and development purposes as authorized by sections 4 and 6 of the Columbia Basin Project Act. All expenses of the land purchase and development program are accounted for through the special Columbia Basin Land Development account. Revenues received from the lease or sale of land to project settlers are credited to the account. After revenues have equaled all expenditures from the account together with 3% interest figured annually on the full amount of debits to the account, excess revenues will then be used to reduce the construction cost repayment obligation of the Columbia Basin irrigation districts. In fiscal year 1986, this account will be consolidated into the Reclamation Fund. The program will continue and revenues will be accounted separately.

Klamath Project

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
Klamath Project Net Net Revenues	2,187	20,446

Payments to counties in lieu of taxes are made annually from the revenues collected each fiscal year from the leasing of Klamath Project reserved Federal lands. Since gross lease revenues are deposited into the Reclamation Fund, when payments to the counties is to be made, funds are appropriated from the Reclamation Fund to a special fund entitled "Payments to Local Units, Klamath Reclamation Area" from which funds are disbursed to the counties.

North Platte Project

	Revenues In Fiscal Year 1985	Cumulative Revenues From Inception Through FY 1985
North Platte Project	33	472

Miscellaneous project revenues are deposited into a special Treasury account called Operation, Maintenance, and Rehabilitation, North Platte Project. The revenues are used for replacements. When the net account balance exceeds $100,000, the excess is credited to the districts based on acreage. The credits are applied first to O&M charges, second to Construction charges, and then as the districts direct.

GRACE COMMISSION RECOMMENDATIONS

Mr. Bevill. The Grace Commission issued several reports a number of years ago on agency management and operations. Could you tell the Committee what action you have taken to address the recommendations of the Grace Commission and what the results have been?

Mr. Duvall. As you know, the Grace Commission report triggered the Administration's Reform 88 program, which calls for a multi-faceted approach to increased efficiency and productivity throughout the Federal government. In Reclamation, this has led to several studies and actions. Last year we consolidated the Lower Missouri and Upper Missouri Regions into the Missouri Basin Region which resulted in a savings of approximately $3 million and 130 FTE's. Under the President's Productivity Improvement Program we have initiated a study to look at the non-contract costs of our construction and design program to see if they can be reduced.

The specific report on Construction Management of the Grace Commission included a recommendation to reduce engineering positions and increase contracting out of construction-related services. In FY 1985 we reduced the technical services group at our Engineering and Research Center by over 200 FTE's with an approximate annual savings of $1.5 million. Bureauwide, contracting out for technical services average 29 percent of technical service costs in FY 1985. Cost avoidances were also realized through our enhanced value engineering efforts.

In the Report on Interior the significant issue in which Reclamation was cited was that of subsidy reduction. We are actively pursuing a program to increase recovery of Federal monies spent in developing water and power resources. This includes the use of higher repayment interest rates where authority exists, shorter repayment periods in the small project loan area, and greater financial participation by project users during development.

In sum, Reclamation has been very active in following the Administration's directive to increase our efficiency and productivity and to look for ways of streamlining, consolidating, and otherwise improving our structure and processes.

GRAMM-RUDMAN-HOLLINGS SEQUESTRATIONS

Mr. Bevill. Provide a summary table of the Gramm-Rudman-Hollings sequestrations, by appropriation account and a copy of agency guidance with regard as to how reductions were to be made.

Mr. Duvall. A table showing sequestrations by appropriation account and by project and the relevant guidance is provided for the record.

(the information follows)

FY 1986 SEQUESTRATIONS

Account	Amount of FY 1986 Sequestration from Budget Authority
Loan Program	$1,691,000
Construction Program	22,433,000
Emergency Fund	43,000
General Investigations	1,464,000
Operation and Maintenance	5,705,000
General Administrative Expenses	2,116,000
Colorado River Dam Fund	897,000
Miscellaneous Permanents	15,000
Subtotal	$34,364,000

	Amount of FY 1986 Sequestration of Spending Authority
Construction Program	5,000
Lower Colorado River Basin Development Fund	4,312,000
Upper Colorado River Basin Fund	1,238,000
General Investigations	3,000
Operation and Maintenance	480,000
Subtotal	$6,038,000
Total	$40,402,000

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Construction Program

Project	Enacted BA FY 1986 1/	Application of P.L. 99-177	Adjusted FY 1986
BOULDER CANYON PROJECT	0	0	0
BRANTLEY PROJECT	27,000,000	1,161,000	25,839,000
CENTRAL ARIZONA PROJECT	22,645,000	973,735	21,671,265
AUBURN-FOLSOM SOUTH UNIT, CVP	1,500,000	64,500	1,435,500
MISC PROJECT PROGRAMS, CVP	1,063,000	45,709	1,017,291
SACRAMENTO RIVER DIVISION, CVP	1,362,000	58,566	1,303,434
SAN FELIPE DIVISION, CVP	35,497,000	1,526,371	33,970,629
SAN LUIS UNIT, CVP	12,490,000	537,070	11,952,930
TRINITY RIVER RESTORATION PRGM	500,000	21,500	478,500
CENTRAL VALLEY PROJECT	52,412,000	2,253,716	50,158,284
CHIEF JOSEPH, OROVILLE-TONASKET	7,025,000	302,075	6,722,925
COLUMBIA BASIN, IRRIG FACILS	6,035,000	259,505	5,775,495
GRAND COULEE THIRD POWERPLANT	9,994,000	429,742	9,564,258
COLUMBIA BASIN PROJECT	16,029,000	689,247	15,339,753
MC GEE CREEK PROJECT	6,645,000	285,735	6,359,265
NUECES RIVER PROJECT	4,834,000	207,862	4,626,138
GARRISON DIVERSION UNIT, P-S	28,000,000	1,204,000	26,796,000
NORTH LOUP DIVISION, P-SMBP	24,249,000	1,042,707	23,206,293
O'NEILL UNIT, P-SMBP	240,000	10,320	229,680
PICK-SLOAN MISSOURI BASIN PRGM	52,489,000	2,257,027	50,231,973
SAN LUIS VALLEY, CLOSED BASIN	9,785,000	420,755	9,364,245
VELARDE COMMUNITY DITCH PROJ	2,666,000	114,638	2,551,362
WEB RURAL WTR DEVELOPMENT PROJ	16,925,000	727,775	16,197,225
YAKIMA, FISH PASG/PRTCV FACILS	353,000	15,179	337,821
REGULAR CONSTRUCTION	218,808,000	9,408,744	209,399,256
CROOKED RIVER, OCHOCO IRRIG	0	0	0
OKANOGAN, OKANOGAN IRRIG DIST	1,357,000	58,351	1,298,649
SALT RIVER, ROOSEVELT WCD	0	0	0
SHOSHONE, HEART MOUNTAIN DIVN	1,000,000	43,000	957,000
SHOSHONE PROJECT	1,000,000	43,000	957,000
STRAWBERRY VALLEY PROJECT	1,720,000	73,960	1,646,040
SUN RIVER, FORT SHAW DIVISION	290,000	12,470	277,530
SUN RIVER PROJECT	290,000	12,470	277,530
UNCOMPAHGRE PROJECT	218,000	9,374	208,626
YAKIMA, YAKIMA-TIETON ID	660,000	28,380	631,620
YAKIMA PROJECT	660,000	28,380	631,620
REHABILITATION AND BETTERMENT	5,245,000	225,535	5,019,465

1/ Figures in this column reflect the assignment of the "Undistributed reduction based on anticipated delays" ($89,500,000) and "Application of unobligated funds from Teton Dam claims" ($14,000,000) within the Construction Program. Consequently some projects will show "0" where the assignment of such reductions is equal to the amount approved by Congress.

Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
ARBUCKLE PROJECT	430,000	18,490	411,510
BOISE, ARROWROCK DAM	300,000	12,900	287,100
BOISE, PAYETTE DIVISION	230,000	9,890	220,110
BOISE PROJECT	530,000	22,790	507,210
CHIEF JOSEPH, MANSON UNIT	15,000	645	14,355
CHIEF JOSEPH DAM PROJECT	15,000	645	14,355
COLO RIV FRONT WORK/LEVEE SYST	13,371,000	574,953	12,796,047
MB	220,000	9,460	210,540
MP	23,000	989	22,011
SW	84,000	3,612	80,388
CULTURAL RESOURCES ACTIVITIES	327,000	14,061	312,939
MISC ENGINEERING SERVICES	10,000	430	9,570
FRYINGPAN-ARKANSAS PROJECT	5,548,000	238,564	5,309,436
GILA PROJECT	997,000	42,871	954,129
KLAMATH PROJECT	1,822,000	78,346	1,743,654
MOUNTAIN PARK PROJECT	200,000	8,600	191,400
NEWLANDS PROJECT	53,000	2,279	50,721
PALMETTO BEND PROJECT	500,000	21,500	478,500
BOSTWICK DIVISION, P-SMBP	40,000	1,720	38,280
CANYON FERRY UNIT, P-SMBP	1,770,000	76,110	1,693,890
EAST BENCH UNIT, P-SMBP	50,000	2,150	47,850
FARWELL UNIT, P-SMBP	230,000	9,890	220,110
OAHE UNIT, P-SMBP	65,000	2,795	62,205
OWL CREEK UNIT, P-SMBP	50,000	2,150	47,850
RIVERTON UNIT, P-SMBP	270,000	11,610	258,390
PICK-SLOAN MISSOURI BASIN PRGM	2,475,000	106,425	2,368,575
REC FACILS AT EXISTING RESRVRS	172,000	7,396	164,604
ROBERT B. GRIFFITH WATER PROJ	50,000	2,150	47,850
WASHITA, FOSS DAM	0	0	0
WASHOE PROJECT	407,000	17,501	389,499
REGIONAL COMPLEX	0	0	0
TWIN FALLS CANAL COMPANY	0	0	0
DRAINAGE AND MINOR CONSTRUCT	26,907,000	1,157,001	25,749,999

Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
NAVAJO UNIT, CRSP	2,536,000	109,048	2,426,952
DEPARTMENT DAM SAFETY PROGRAM	450,000	19,350	430,650
FRUITGROWERS DAM PROJECT	1,125,000	48,375	1,076,625
LEWISTON ORCHARDS PROJECT	600,000	25,800	574,200
MINIDOKA, JACKSON LAKE DAM	3,200,000	137,600	3,062,400
MINIDOKA PROJECT	3,200,000	137,600	3,062,400
HEART BUTTE UNIT, P-SMBP	760,000	32,680	727,320
PACTOLA DAM, RAPID VAL UNT,P-S	4,600,000	197,800	4,402,200
PICK-SLOAN MISSOURI BASIN PRGM	5,360,000	230,480	5,129,520
SALT RIVER, STEWART MT DAM	600,000	25,800	574,200
SALT RIVER, THEO ROOSEVELT DAM	4,000,000	172,000	3,828,000
SALT RIVER PROJECT	4,600,000	197,800	4,402,200
MODF REPORTS-PRECNSTR ACTIVITY	2,164,000	93,052	2,070,948
SEEDSKADEE PROJECT (CRSPP)	300,000	12,900	287,100
W. C. AUSTIN, ALTUS DAM	400,000	17,200	382,800
SAFETY OF DAMS PROGRAMS	20,735,000	891,605	19,843,395
NARROWS UNIT, P-SMBP	500,000	21,500	478,500
PICK-SLOAN MISSOURI BASIN PRGM	500,000	21,500	478,500
PRECONSTRUCTION ACTIVITY	500,000	21,500	478,500
CONSTRUCTION/REHABILITATION	272,195,000	11,704,385	260,490,615
CRBSCP, (TITLE 1, DIVISION)	20,000,000	860,000	19,140,000
COLO. RIV SALINITY-TITLE 1	20,000,000	860,000	19,140,000
CRBSCP, GRAND VALLEY UNIT	2,241,000	96,363	2,144,637
CRBSCP, LAS VEGAS WASH UNIT	0	0	0
CRBSCP, PARADOX VALLEY UNIT	1,117,000	48,031	1,068,969
COLO. RIV SALINITY-TITLE 2	3,358,000	144,394	3,213,606
COLORADO RIVER SALINITY CONTRL	23,358,000	1,004,394	22,353,606

Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
ANIMAS-LA PLATA PROJ (CRSPP)	0	0	0
CUP, BONNEVILLE UNIT (CRSPP)	44,804,000	1,926,572	42,877,428
CUP, JENSEN UNIT (CRSPP)	1,216,000	52,288	1,163,712
CUP, UPALCO UNIT (CRSPP)	2,612,000	112,316	2,499,684
CENTRAL UTAH PROJECT (CRSPP)	48,632,000	2,091,176	46,540,824
DALLAS CREEK PROJECT (CRSPP)	5,604,000	240,972	5,363,028
DOLORES PROJECT (CRSPP)	22,576,000	970,768	21,605,232
CRSP, REGULAR CONSTRUCTION	76,812,000	3,302,916	73,509,084
MODF/ADDN TO CMPLTD FACIL,CRSP	0	0	0
CRSP, DRAIN/MINOR CONSTRUCT	0	0	0
CUP, UINTAH UNIT (CRSPP)	250,000	10,750	239,250
CRSP, PRECONSTRUCTION PLAN	250,000	10,750	239,250
COLO RIVER STOR PROJ,SEC 5 C/R	77,062,000	3,313,666	73,748,334
CUP, BONNEVILLE UNIT (CRSPP)	1,155,000	49,665	1,105,335
CRSP, FISH/WILDLIFE (SEC 8)	1,155,000	49,665	1,105,335
CUP, BONNEVILLE UNIT (CRSPP)	611,000	26,273	584,727
DALLAS CREEK PROJECT (CRSPP)	2,392,000	102,856	2,289,144
DOLORES PROJECT (CRSPP)	1,547,000	66,521	1,480,479
CRSP, RECREATION (SEC 8)	4,550,000	195,650	4,354,350
COLO RIVER STOR PROJ, SEC 8	5,705,000	245,315	5,459,685
CENTRAL ARIZONA PROJECT	143,380,000	6,165,240	137,214,760
COLORADO RIVER BASIN PROJECT	143,380,000	6,165,240	137,214,760
CONSTRUCTION PROGRAM	521,700,000	22,433,000	499,267,000
* TOTAL - ALL APPROPRIATIONS *	521,700,000	22,433,000	499,267,000

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Loan Program

Project	Enacted BA FY1986*	Application of PL 99-177	Adjusted BA FY 1986
ARIZ AK CHIN FARMS PROJ-EAST	1,091,000	46,913	1,044,087
ARIZ AK CHIN FARMS - PHASE TWO	2,000,000	86,000	1,914,000
ARIZ GILA RIVER FARMS-SUPL	500,000	21,500	478,500
ARIZ ROOSEVELT IRRIG DIST	100,000	4,300	95,700
CAL COLUSA COUNTY WATER DIST	0	0	0
CAL EASTERN MUNICIPAL WD	2,000,000	86,000	1,914,000
CAL ELSINORE VALLEY MWD	500,000	21,500	478,500
CAL OAKDALE IRRIGATION DIST	4,970,000	213,710	4,756,290
CAL RAINBOW MUNIC WATER DIST	3,129,000	134,547	2,994,453
CAL RAMONA MUNIC WATER DIST	1,812,000	77,916	1,734,084
CAL RANCHO CALIFORNIA WD	100,000	4,300	95,700
CAL SANTA ANA WTRSHED ATHRTY	4,000,000	172,000	3,828,000
CAL YUBA COUNTY WATER AGENCY	5,186,000	222,998	4,963,002
COLO AMITY MUTUAL IRRIG COMP	1,682,000	72,326	1,609,674
MONT E BENCH GRAVITY SYST NO.1	2,018,000	86,774	1,931,226
OREG GALESVILLE PROJECT	4,351,000	187,093	4,163,907
TEX DELTA LAKE IRRIG DIST	521,000	22,403	498,597
TEX HIDALGO CO ID NO. 1-SUPL	0	0	0
TEX HIDALGO COUNTY ID NO. 2	2,000,000	86,000	1,914,000
WASH GREATER WENATCHEE ID	1,500,000	64,500	1,435,500
COST/CONTRACT ESCALATION	1,000,000	43,000	957,000
ADMINISTRATION	855,000	36,765	818,235
LOAN PROGRAM	39,315,000	1,691,000	37,624,000

*Figures in this column reflect the assignment of the "Undistributed reduction based on anticipated delays" ($9,681,000) within the Loan Program. Consequently, some projects will show "0" where the assignment of such reductions is equal to the amount approved by Congress.

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

General Investigations Program

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
ALAMOGORDO WATER SUPPLY STUDY	200,000	8,600	191,400
BEDIAS PROJECT	395,000	16,985	378,015
BLUE HOLES RESERVOIR	150,000	6,450	143,550
CENTRAL VALLEY FISH/WILDLIFE	487,000	20,941	466,059
COLO RIV WTR QUAL IMPRVMT PRGM	4,418,000	189,974	4,228,026
COLORADO-BIG THOMPSON PP	140,000	6,020	133,980
CROSS DELTA CONSTRICTION INVST	250,000	10,750	239,250
DEEP-CARBONATE AQUIFER INVSTGN	750,000	32,250	717,750
DELTA SUPPORT STUDIES	322,000	13,846	308,154
EAST CENTRAL OKLA WTR SUPPLY	300,000	12,900	287,100
ENVIR/INTERAGENCY COORD ACT	3,435,000	147,705	3,287,295
FLAMING GORGE - PEAKING, CRSP	50,000	2,150	47,850
GALLUP-NAVAJO SUPPLY PROJECT	200,000	8,600	191,400
GENERAL PLANNING STUDIES	420,000	18,060	401,940
GROUNDWATER RECHARGE DEMO PRGM	500,000	21,500	478,500
HIGH MOUNTAIN AQUIFER	100,000	4,300	95,700
IMPERIAL ID CANAL LINING	200,000	8,600	191,400
INVESTIGATION OF EXISTING PROJ	158,000	6,794	151,206
KANSAS RIV BASIN WTR MGMT STDY	115,000	4,945	110,055
KELLOGG UNT REFORMULATION, CVP	68,000	2,924	65,076
KIAMICHI HYDROPOWER STUDY	300,000	12,900	287,100
LOUP RIVER BASIN STUDY	100,000	4,300	95,700
MESA-DELTA M/I GRDWTR STUDY	515,000	22,145	492,855
MILK RIVER WATER SUPPLY,P-SMBP	140,000	6,020	133,980
MINIDOKA NORTH SIDE PUMPING	50,000	2,150	47,850
MINOR WORK ON CMPLTD INVSTGNS	535,000	23,005	511,995
N DOUGLAS CO COOP WTR RES STDY	170,000	7,310	162,690
NW OKLAHOMA WTR SUPPLY STUDIES	185,000	7,955	177,045
OAKLEY FAN GRDWTR/RECHRG INVST	150,000	6,450	143,550
OFF-STREAM STORAGE	150,000	6,450	143,550
PIMA CO/SANTA CRUZ RIV GRDWTR	100,000	4,300	95,700
PLATTE RIV WTR USE OPTS, P-S	77,000	3,311	73,689
POJOAQUE VALLEY WATER STUDY	150,000	6,450	143,550

GENERAL INVESTIGATIONS

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
PRAIRIE BEND UNIT, P-SMBP	245,000	10,535	234,465
REFUGE WATER SUPPLIES	80,000	3,440	76,560
S DAKOTA WATER DELIVERY, P-S	50,000	2,150	47,850
SAN JACINTO PROJECT	275,000	11,825	263,175
SAN JOAQUIN VALLEY CONVEYANCE	743,000	31,949	711,051
SE OKLA WTR SUPPLY/DSTRB STDY	300,000	12,900	287,100
SPRING CANYON PUMP STORAGE	240,000	10,320	229,680
TAOS COMMUNITY DITCH EVAL	30,000	1,290	28,710
TECHNICAL ASSISTANCE TO STATES	1,500,000	64,500	1,435,500
TEXAS BIG SANDY PROJECT	320,000	13,760	306,240
UMATILLA BASIN PROJECT	250,000	10,750	239,250
WASATCH FRONT TOTAL WTR MGMT	240,000	10,320	229,680
WESTSIDE IRRIGATION PROJ, WY	100,000	4,300	95,700
YAKIMA RIVER BASIN WTR ENHNCMT	277,000	11,911	265,089
0 -- UNDERFINANCING -- 0	(875,000)	(37,625)	(837,375)

GEN INVESTIGATION-FORMULATION	19,055,000	819,860	18,235,140
ALL-AMERICAN CANAL RELOCATION	300,000	12,900	287,100
CENTRAL S DAKOTA WATER, P-SMBP	1,775,000	76,325	1,698,675
CRWQIP, BIG SANDY RIVER UNIT	1,000,000	43,000	957,000
CRWQIP, LOWER GUNNISON WSI	220,000	9,460	210,540
LOWER COLORADO WTR SUPPLY STDY	160,000	6,880	153,120
MINIDOKA NORTH SIDE PUMPING	225,000	9,675	215,325
1X BASINS, COLO COASTAL PLAINS	600,000	25,800	574,200
0 -- UNDERFINANCING -- 0	(300,000)	(12,900)	(287,100)

ADVANCE PLANNING	3,980,000	171,140	3,808,860
	============		
PLAN FORM AND ADVANCE PLAN	23,035,000	991,000	22,044,000
ATMOSPHERIC WATER RES MGT PRGM	6,100,000	262,300	5,837,700
PRGM RELATED ENGR/SCIENT STDYS	4,900,000	210,700	4,689,300
	============		
ENGINEERING/RESEARCH	11,000,000	473,000	10,527,000
GENERAL INVESTIGATIONS	34,035,000	1,464,000	32,571,000

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Operation and Maintenance Program

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
BOULDER CANYON PROJECT	6,500,000	279,500	6,220,500
PARKER-DAVIS PROJECT	2,484,000	106,812	2,377,188
YUMA AREA PROJECTS O/M	4,070,000	175,010	3,894,990
COLORADO-BIG THOMPSON PROJECT	5,761,000	247,723	5,513,277
FRYINGPAN-ARKANSAS PROJECT	1,777,000	76,411	1,700,589
MILK RIVER PROJECT	52,000	2,236	49,764
KANSAS RIVER AREA O/M, P-SMBP	1,305,000	56,115	1,248,885
NORTH PLATTE AREA O/M, P-SMBP	7,939,000	341,377	7,597,623
UPPER MISSOURI O/M, P-SMBP	8,215,000	353,245	7,861,755
PICK-SLOAN MISSOURI BASIN PRGM	17,459,000	750,737	16,708,263
CACHUMA PROJECT	178,000	7,654	170,346
CENTRAL VALLEY PROJECT O/M	37,687,000	1,620,541	36,066,459
KLAMATH PROJECT	634,000	27,262	606,738
ORLAND PROJECT	165,000	7,095	157,905
SOLANO PROJECT	1,609,000	69,187	1,539,813
WASHOE PROJECT	365,000	15,695	349,305
BOISE PROJECT	1,918,000	82,474	1,835,526
COLUMBIA BASIN PROJECT O/M	19,625,000	843,875	18,781,125
CROOKED RIVER PROJECT	93,000	3,999	89,001
HUNGRY HORSE PROJECT	1,376,000	59,168	1,316,832
MINIDOKA AREA PROJECTS	3,267,000	140,481	3,126,519
ROGUE RIVER, TALENT DIVISION	198,000	8,514	189,486
TUALATIN PROJECT	40,000	1,720	38,280
UMATILLA PROJECT	64,000	2,752	61,248
YAKIMA PROJECT	1,885,000	81,055	1,803,945
CARLSBAD PROJECT	23,000	989	22,011
MC GEE CREEK PROJECT	134,000	5,762	128,238
MIDDLE RIO GRANDE PROJECT	7,368,000	316,824	7,051,176
PECOS RIV BSN WTR SALVAGE PROJ	350,000	15,050	334,950
RIO GRANDE PROJECT	2,455,000	105,565	2,349,435
SAN LUIS VAL PROJ, CONEJOS DIV	110,000	4,730	105,270
SAN LUIS VALLEY, CLOSED BASIN	328,000	14,104	313,896
SAN LUIS VALLEY PROJECT	438,000	18,834	419,166

.PERATION AND MAINTENANCE

Page 2

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
WASHITA BASIN PROJECT	20,000	860	19,140
COLLBRAN PROJECT	800,000	34,400	765,600
MANCOS PROJECT	61,000	2,623	58,377
PROVO RIVER PROJECT	102,000	4,386	97,614
O/M PROJECTS	118,958,000	5,115,599	113,842,401
EXAM OF EXISTING STRUCTURES	7,000,000	301,000	6,699,000
LAND RESOURCES MANAGEMENT PRGM	967,000	41,581	925,419
MISC FLOOD CONTROL OPERATIONS	216,000	9,288	206,712
NEGO/ADMIN OF WATER MARKETING	10,000	430	9,570
RECLAMATION REFORM PROGRAM	3,719,000	159,917	3,559,083
SOIL AND MOISTURE CONSERVATION	1,695,000	72,885	1,622,115
WATER MGMT/CONSERVATION PRGM	100,000	4,300	95,700
O/M PROGRAMS	13,707,000	589,401	13,117,599
OPERATION AND MAINTENANCE	132,665,000	5,705,000	126,960,000

United States Department of the Inter

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

UREAU OF RECL
OFF FILE COPY
REC'D JAN 21 1986
136 / A / 622
EI /300/ 411-05

TO	INIT	DATE
110	[illegible]	1/21/86
300	[illegible]	1/2.
301		
FILES		

JAN 14 1986

Memorandum

To: Assistant Secretaries
Heads of Bureaus and Offices
Solicitor

From: Assistant Secretary - Policy, Budget and Administration

Subject: Gramm-Rudman Reductions in FY 1986

As you are no doubt aware, and as the attached memorandum from the Director of the Office of Management and Budget states, all Federal agencies will be required to make reductions in FY 1986 outlays as a result of the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L.99-177), also known as Gramm-Rudman. A brief summary of the Act is attached.

Your budget officers participated in the initial exercise with the Office of Management and Budget which established base levels from which Gramm-Rudman sequestration reductions will be made. The Presidential Order for these reductions will be issued on February 1, and on March 1 the President's order will go into effect. An across-the-board reduction of 4.3 percent, announced on January 10 by OMB, will be made in all sequestrable accounts. Reductions are to be made at the "program, project, and activity" (PPA) level as defined by the House and Senate Appropriations Committees in the Conference Report on the FY 1986 Continuing Resolution (Rpt. 99-450). The report language on PPA levels is given in the summary attached.

It is important that you plan now to accommodate these reductions and the lower operating levels that are likely to result in FY 1986 and subsequent years. Actions taken now to closely monitor obligations and prudently plan expenditures will help us in planning for the remainder of the year.

Attachments

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON D.C. 20503

January 2, 1986

M-86-10

MEMORANDUM FOR HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: James C. Miller III
Director

SUBJECT: Obligation of Funds in FY 1986 and Effects of Changes in Technical Factors for FY 1987

The sequestration process established by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177) almost surely will require reductions in outlays in FY 1986. The amount of the required reduction is $11.7 billion -- approximately half in defense and half in nondefense programs. (About $1 billion of the reduction will be in cost-of-living adjustments; the remainder will be achieved through sequestration of discretionary funds.)

Because of the sequestration, less than the full amount of the appropriations enacted for 1986 will be available for obligation. Your planned obligations for the year should take this into account and should be based on the assumption that supplemental requests to restore the sequestered funds will not be made. Such requests would be inconsistent with the deficit reduction objectives of the President and of the Act.

I am confident that, with proper planning, the lower amounts for FY 1986 can be accommodated in a manner that will facilitate the transition to the lower operating levels envisioned for many programs in subsequent years. The President is counting on your cooperation in making the transition as smooth as possible.

On a related matter, the budget estimates for all years for your agency are currently being revised to take into account the President's policy decisions, new economic assumptions, and changes in technical factors. Should technical factors suggest an increase in your estimates of outlays for this fiscal year and beyond, you must make every effort to find offsetting reductions elsewhere. To do otherwise would add to the difficulty of achieving the deficit targets adopted by the President and spelled out in the Act.

Thank you very much for your cooperation. Have a Happy New Year!

January 10, 1986

Highlights of Gramm-Rudman
Balanced Budget and Emergency Deficit Control Act of 1985 (P.L.99-177)

I. INTRODUCTION

There will be significant changes in the Federal budget process resulting from enactment on December 12 of the Balanced Budget and Emergency Deficit Control Act of 1985, commonly referred to as Gramm-Rudman (names of two of its Senate sponsors). The act amends the Congressional Budget Act of 1974 and alters the Congressional budget process established by that Act. It mandates a balanced Federal budget by 1991, establishes a maximum deficit amount for each fiscal year from FY 1986-1991, and institutes new procedures for automatic, across-the-board spending cuts if the annual deficit exceeds the target.

The constitutionality of some of the procedures established in the act is now before the courts; however, until this issue has been resolved, the sequestration procedures are to be followed. We are working now with OMB on the FY 1986 reductions. Since some procedures are being tried for the first time and since there are many gray areas, we cannot be certain of all the details or exactly how the process will work. The following briefly explains what is involved.

II. SEQUESTRATION

Sequestration (and reduction) is the permanent cancellation of spending authority, new budget authority, obligation limitations, new loan guarantee commitments, new direct loan obligations. The sequestration process is the automatic deficit reduction mechanism which goes into effect if the Congress fails to meet the upcoming fiscal year's maximum deficit target through appropriations or tax legislation.

Maximum deficit amounts

Gramm-Rudman establishes maximum deficit amounts for the total Federal government for each of fiscal years 1986 through 1991. These maximum deficit amounts, in billions, are:

FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
$ 171.9	$ 144.0*	$ 108.0*	$ 72.0*	$ 36.0*	$0

(*For FY 1987-FY 1990, an overtarget amount of $10 billion is allowed.)

If the fiscal year deficit is determined by OMB, CBO, and GAO to be over the maximum allowable deficit, the excess will be eliminated through sequestration and reduction. If the excess is $10 billion or less in fiscal years 1987-1990, the sequestration process would not be triggered.

The process - FY 1986

Briefly, on January 10, OMB and CBO will take a "snapshot" of the economy and project economic growth, estimate the budget base levels and the deficit, and determine whether the projected deficit will exceed the target or maximum deficit amount. If OMB and CBO project an excess deficit, they must submit a report to the Comptroller General (GAO) on January 15. Although estimates now place the FY 1986 deficit at around $200 billion, approximately $30 billion in excess of the target of $171.9 billion, the full amount of this excess will not be sequestered this year. The law specifically states that only $11.7 billion will be seqestered in FY 1986. If the Comptroller General agrees there is an excess and reports it to the President and the Congress, in a required January 20 report, the President must issue an order on February 1 to sequester the necessary amounts.

Outlay reductions will be made in automatic spending increases (such as cost-of-living allowances) and across the board in all acounts which have not been specifically exempted. Fifty percent of the outlay reductions will be made in Defense programs, 50 percent in non-Defense programs. In their January 15 report, OMB and CBO will specify the base level for each account from which reductions are to be taken and the percentage of the reductions for each account. The President's sequestration order will specify these same percentage reductions for all programs, projects, and activities of all sequestrable accounts.

Sequestration levels - "program, project, and activity" (PPA)

As indicated, reductions will be made at the "program, project, and activity" (PPA) level for each sequestrable account. For controllable accounts, in which funds are provided in annual appropriation acts, the Appropriations Committees will determine at what level within each appropriation the percentage reduction will be allocated. Reductions are to be made in each affected program, project, and activity as set forth in the most recently enacted appropriation act and accompanying report. The Appropriations Committees have defined "program, project, and activity" for FY 1986.

The definition of "program, project, and activity" for Interior and Related Agencies appropriations was given in the Conference Report accompanying the FY 1986 Continuing Resolution (P.L. 99-190) as follows:

(1) any item specifically identified in tables or written material set forth in the Interior and Related Agencies Apropriations Act, 1986 1/

(2) any Government-owned or Government-operated facility, and

(3) management units, such as national parks, national forests, fish hatcheries, wildlife refuges and the like, for which funds are provided in fiscal year 1986.

The definition for Energy and Water appropriations (Bureau of Reclamation) was also given in the CR Conference Report as follows:

(1) items in the fiscal year 1986 budget submission of the President as subsequently modified or changed by Congressional action and identified in the Energy and Water Development Appropriations Act, 1986, 2/

(2) additionally any and all individual items or line items listed, discussed, described, included in or in any way identified or referred to in narrative or tabular documentation or references including the supporting justification material submitted by the agencies.

1/ as shown in H.R. 3011 and accompanying committee reports (H. Rept. 99-205 and S. Rept. 99-141), and the joint resolution providing continuing appropriations (H.J. Res. 465) and the conference report and accompanying joint explanatory statement of the managers of the committees of conference;

2/ as shown in House and Senate committee reports (H. Rept. 99-195 and S. Rept. 99-110), the conference report and accompanying joint explanatory statement of the managers of the committee of conference (H. Rept. 99-307).

Limitations on sequestration

The law states that the sequestration process may not eliminate any program, project, or activity of the Federal Government. The President is not given new authority to alter the Federal budget's relative priorities established by law. No one eligible for benefits under law is to be deprived eligibility by this law. Rates of Federal pay may not be reduced.

Limitations imposed by the Energy and Water Subcommittee in the Conference Report on the Continuing Resolution state that the reductions are not intended to disproportionately reduce personnel, otherwise reorder funds or priorities, or initiate unfunded new programs, projects, or activities. The subcommittee also states that it is the intention that reductions apply to budget authority after the normal application of general reductions and savings and slippage.

Sequestration will not take place if (1) Congress declares a war or (2) if there is a recession--if (a) OMB or CBO projects real economic growth of less than zero for two consecutive quarters of a specified period, or (b) if the Commerce Department indicates the rate of real economic growth for two consecutive quarters is less than one percent.

III. EXEMPTIONS FROM SEQUESTRATION

Major Federal Programs

Looking at the total picture, it is estimated that about 70-75 percent of the budget will be exempt. One House Budget Committee estimate is that $700 billion of the FY 1986 total outlays of $974 billion will be exempt. Some of the major Federal programs or expenses exempt from sequestration are Social Security benefits, veteran's compensation and pensions, and net interest on the national debt. These programs alone account for over half of the total exempted amount.

Other programs are partially exempt. Various health programs such as Medicare, veterans' medical care, Indian health, community and migrant health, and cost-of-living allowances for certain programs are partially exempt. Certain other programs may be exempt as determined by OMB and CBO.

Interior Exemptions

Almost all of Interior's accounts are considered sequestrable, including payments in lieu of taxes (BLM), payments to States under the Mineral Leasing Act (MMS), and sport fish restoration (FWS).

Accounts considered exempt are contributed funds, working capital funds, and certain trust funds; however, the administrative expenses associated with some of these accounts are not exempt. Certain Indian accounts (trust funds, land claim settlement funds, loan guarantee and insurance fund) were specifically identified in the Act as exempt. In addition, for any account with prior-year balances, the legislation exempts prior-year outlays from contracts, obligations, and unobligated balances.

IV. STATUS OF SEQUESTRATION PROCESS FOR INTERIOR

The Office of Budget and all bureau budget officers participated in the first phase of the sequestration process, which was to establish the FY 1986 budget base level for each account. These estimates, which were submitted to OMB, will be used by OMB and CBO and GAO in their reports on sequestration reductions. We worked with OMB to determine both the estimated base levels and whether the accounts should be considered exempt or sequestrable. OMB and CBO are now using this data to estimate budget outlays and reduction percentages for those accounts.

There is no doubt that we will be required to make reductions in FY 1986 budget authority and outlays. On January 2, Jim Miller, Director of OMB, sent a letter to heads of all executive departments notifying them that Gramm-Rudman reductions will almost surely be made in FY 1986 and recommending that agencies begin planning to accommodate these reductions and the lower operating levels that are likely to result in FY 1986 and subsequent years. No supplemental requests will be approved to restore sequestered funds. Actions taken now to closely monitor obligations and prudently plan expenditures will help prevent unpleasant situations later in the fiscal year.

V. SEQUESTRATION TIMETABLE

The timetable for the sequestration process is:

FY1986	FY 1987-1991	
On JAN 10	On AUG 15	OMB and CBO project economic growth, estimate budget base levels, estimate the deficit, determine whether the deficit exceeds the target and/or overtarget allowance. (If OMB and CBO's numbers don't agree, they are averaged.)
JAN 15	AUG 20	OMB and CBO submit joint report of findings to the Comptroller General (GAO), specifying the base amount for each account from which outlay reductions are to be taken and the percentages of the reductions.
JAN 20	AUG 25	Comptroller General (GAO) reviews and revises OMB/CBO report and sends it to the President and Congress.
FEB 1	SEP 1	President issues initial sequestration order if deficit exceeds the allowable amount. (In FY 1986, this is the only order issued.) Amounts are deferred.
MAR 1	OCT 1	President's order becomes effective.
N/A	OCT 5	OMB/CBO issue revised report.
N/A	OCT 10	GAO issues revised report. (If excess deficit has been eliminated, GAO issues revised report, President issues order making withheld amounts available for obligation.)
N/A	OCT 15	President issues final order if excess has not been eliminated. Amounts are sequestered (cancelled).
NA	OCT 17	Congressional action initiated to approve or amend the reductions in the President's final order.
On or before APR 1	On or before NOV 15	GAO submits report on compliance with requirements of the Act.

EMPLOYMENT LEVELS

Mr. Bevill. Provide a summary table showing employment levels for the agency in the same format that appears in House Report 99-195 on page 8.

Mr. Duval. A table follows showing the requested employment.

(the information follows)

EMPLOYEES FUNDED BY ENERGY AND WATER DEVELOPMENT APPROPRIATIONS

(Workyears)

	Fiscal year 1985			Fiscal year 1986			Fiscal year 1987		
	Federal	Non-Federal	Total	Federal	Non-Federal	Total	Federal	Non-Federal	Total
Bureau of Reclamation	8,078	15,710	23,788	8,144	13,850	21,994	8,032	13,310	21,342

CAPITAL AND OPERATING EXPENSES

Mr. Bevill. Provide a summary table showing the breakdown of appropriations by capital and operating expenses in the same format that appears in House Report 99-195 on page 7.

Mr. Duvall. We will be happy to provide the table for the record.

(The information follows:)

TABLE OF OPERATING AND CAPITAL EXPENSES

	Fiscal Year 1987 Recommendation
Construction Program	
Operating Expenses	$ 267,878,000
Capital and construction	308,881,000
Total	576,759,000
Loan Program	
Operating Expenses	$ 3,117,000
Capital and construction	43,824,000*
Total	46,941,000*
General Investigations	
Operating Expenses	$ 26,720,000
Capital and construction	1,100,000
Total	27,820,000
Operation and Maintenance	
Operating Expenses	$ 113,887,000
Capital and construction	36,113,000
Total	150,000,000
General Administrative Expenses	
Operating Expenses	$ 49,200,000
Capital and construction	2,000,000
Total	51,200,000
Emergency Fund	
Operating Expenses	$ 0
Capital and construction	1,000,000
Total	1,000,000
Working Capital Fund	
Operating Expenses	$ 0
Capital and construction	6,400,000
Total	6,400,000
All Appropriations	
Operating Expenses	$ 460,802,000
Capital and construction	399,318,000*
Grand Total	860,120,000*

* Includes $7 million in unobligated balances from FY 1986 in the Loan Program.

BUDGET AUTHORITY AND OUTLAYS

Mr. Bevill. Provide a summary table showing the prior three years' estimated outlays and actual outlays, by appropriation account, and a table showing the FY 1987 budget authority request and outlays associated with that request for the next five years. Provide this by appropriation account.

Mr. Duvall. Tables showing the requested data are provided for the record.

(The information follows:)

DEPARTMENT OF INTERIOR

BUREAU OF RECLAMATION

Table of Actual and Estimated Outlays: 1983 to 1985
(in thousands of dollars)

March 5, 1986

	1983	1984	1985
Construction:			
Actual BO	579,788	600,801	654,349
Estimated BO	580,000	660,000	700,158
Loan Program:			
Actual BO	31,386	45,479	59,531
Estimated BO	26,453	60,000	62,408
General Investigations:			
Actual BO	41,413	35,063	33,504
Estimated BO	49,129	39,000	35,770
General Admin. Expenses:			
Actual BO	40,140	44,455	48,937
Estimated BO	40,465	53,750	64,497
Operation & Maintenance:			
Actual BO	136,114	134,723	141,291
Estimated BO	129,334	136,000	147,200
Emergency:			
Actual BO	1,372	3,089	2,091
Estimated BO	3,000	3,000	2,000
Total:			
Actual BO	830,213	863,610	939,703
Estimated BO	828,381	951,750	1,012,033

COMPUTER AIDED DESIGN AND DRAFTING SYSTEM

Mr. Bevill. Please describe the requirements analysis process you have used to determine the needs for a Bureau-wide Computer Aided Design and Drafting System (CADDS).

Mr. Duvall. A team was formed with representatives from regional and project offices, and the design branches of the Engineering and Research Center in Denver, Colorado. The team identified the planning and design functions that would provide the greatest benefits to the mission of the Bureau if implemented on CADDS. From analysis of those functions the team was then able to develop specific equipment and software requirements.

Mr. Bevill. If you have a benefit/cost ratio calculated for the CADDS, how was this determined and what is this figure?

Mr. Duvall. The system was justified using a productivity factor of 2.5:1 which was determined from the study of CADDS implementations in other government agencies and in private engineering firms. Our own pilot installation of computer drafting was also used to validate the productivity factor. Other significant benefits include increased design detail, more rapid alternative analysis, terrain modeling, automated quantities calculations and rapid preparation of as-built drawings.

Mr. Bevill. What are the total expected costs of CADDS and when will it be in full operation?

Mr. Duvall. Acquisition cost of the CADDS capital equipment is estimated to be $15.4 million. Additional costs would be associated with maintenance agreements, software development and purchases, and operation of the system. While actual cost will depend on the final contract award, we do not expect the total system life costs to exceed $20.0 million. We anticipate award in late FY 1986. We have programmed $2.0 million in FY 1986 and $6.4 million in FY 1987. While portions of the system will be operational in FY 1987, final acquisition and full operational capability will be achieved in FY 1988.

Mr. Bevill. Please describe the specific uses of CADDS; i.e., where will it be used and what type of work now done through other means will be done on it?

Mr. Duvall. The CADDS will be located in the design and engineering units of 10 regional and project offices and at the Engineering and Research Center. Our engineering and design work is a mix of manual and computer analyses using batch and time sharing on the central computer system in Denver. Most of the conceptual layouts and final drawings are still manually prepared.

At the regional and project offices the CADDS will be used for survey support, mapping, geologic studies, and digital terrain modeling for preparation of design data and for preliminary design work. In addition CADDS will be used for civil, mechanical and electrical engineering support; for computation of contract pay quantities; and for preparation of as-built drawings.

At the Engineering and Research Center the CADDS will be used for development of designs for complex features such as large powerplants, pumping plants, water conveyance systems, tunnels, and dams. This will include engineering analysis and drafting for all engineering disciplines, geology and architecture.

BUREAU OF RECLAMATION

Table of Fiscal Year 1987 Budget Authority and Associated Outlays for Fiscal Years 1987 to 1991

(in thousands of dollars)

	Budget Authority 1987 Request	Associated Budget Outlays				
		1987 1/ Estimate	1988 Estimate	1989 Estimate	1990 Estimate	1991 Estimate
Construction Program	576,759	397,000	115,000	58,000	0	0
Operation and Maintenance	150,000	121,000	27,000	0	0	0
Loan Program	39,941	24,000	10,000	6,000	0	0
General Investigations	27,820	19,000	8,000	0	0	0
General Admin. Expenses	51,200	46,000	5,000	0	0	0
Working Capital Fund	6,400	5,000	1,000	0	0	0
Emergency Fund	1,000	1,000	0	0	0	0
TOTAL	853,120	613,000	166,000	64,000	0	0

1/ Includes reductions pursuant to P.L. 99-177.

Questions Submitted by the Hon. Silvio Conte

FISCAL YEAR 1987 BUDGET REQUEST

Mr. Conte. As we consider the budget for the Bureau of Reclamation, it appears that water resource development has been especially favored in this budget. Your proposal of $853.1 million in new budget authority represents a 9.6% increase above last year's appropriation, and a 14.6% increase above your 1986 figure after Gramm-Rudman. Those increases are the envy of many other programs, at a time when most domestic efforts are being cut back or at best frozen, especially elsewhere within the Department of Interior. Mr. Secretary, could you comment on those budget priorities, and explain how the Bureau was able to receive such a favorable budget request in these times of fiscal restraint?

Mr. Hodel. There has been a lot of confusion about the direction of the Bureau of Reclamation's budget. It should be made clear that the Bureau's budget as properly measured in total dollars available for obligation and in terms of expenditures decreases in FY 1987 relative to FY 1986. The following is an explanation of how this happens despite an increase in budget authority.

In FY 1987, we are requesting from the Congress a budget authority level of $853 million which represents an increase of $109 million over the 1986 budget authority level after Gramm Rudman cuts are official. Although requested budget authority increases in FY 1987 ($77 million of which is in the construction program) using that figure to determine the proper size of Reclamation's budget and comparing it to FY 1986 creates a gross distortion. This is because budget authority is only a partial source of funding in FY 1986. (See attached table.) Because of the availability of large unobligated balances from prior years, the FY 1986 construction program of approximately $600 million is being financed by $499 million in budget authority and over $100 million in unobligated balances carried over from prior years. In FY 1987, the construction program of $577 million is financed entirely by new budget authority, as we are planning to exhaust all of the unobligated balances in FY 1986.

Therefore, the correct comparison of the size of the construction program in FY 1986 and 1987 is the total dollars available for obligations, which are $600 million and $577 million, respectively. Instead of an increase in the program, as represented by the budget authority levels, the construction program is in fact decreasing by $23 million. Futher, in terms of outlays (i.e. expenditures) the construction program is decreasing by $65 million from 1986 to 1987. "Expenditures" is the proper category used to measure the deficit. The $65 million decrease is part of the President's deficit reduction plan. In sum, rather than increasing, the Bureau of Reclamation's budgetary resources are, in fact, decreasing.

The attached table compares the budgetary resources for FY 1985, 1986, and 1987. It displays budget authority, obligations, and outlays to give a full picture of the Bureau of Reclamation's budgetary reources.

(The information follows:)

DEPARTMENT OF INTERIOR

BUREAU OF RECLAMATION

Budget Authority, Obligation Target and Outlays
FY 1985 through FY 1987
(in thousands of dollars)

		1985			1986			1987	
	BA	Actual Obligations	Outlays	BA	Oblig Target 1/	Outlays	BA	Oblig Target 1/	Outlays
Loan Program	67,537	56,496	59,531	37,624	48,125	48,986	39,941	45,021	50,252
Construction	754,300	710,982	661,572	499,267	600,089	689,300	576,759	576,939	624,463
GI	35,566	37,394	33,504	32,571	33,176	34,916	27,820	27,849	29,437
Emergency	1,000	1,343	2,091	957	1,002	974	1,000	1,000	983
O & M	149,689	140,816	141,291	126,960	140,479	133,389	150,000	150,124	142,426
GAE	58,917	51,385	48,937	47,084	63,202	63,094	51,200	51,225	53,790
WCF	- -	- -	- -	- -	- -	- -	6,400	6,400	6,400
Total - Annual Appropriations	1,067,009	998,416	946,926	744,463	886,073	970,659	853,120	858,558	907,751

Includes application of Gramm-Rudman reductions in 1986.

1/ Obligation target = total dollars available to obligate and carry out the program. The difference between the obligation target and budget authority is the amount of unobligated funds carried over from previous years.

GARRISON DIVERSION UNIT

Mr. Conte. Mr. Secretary, in last year's Energy and Water Appropriations Act, we prohibited the use of funds for the Garrison Diversion Unit in North Dakota unless the project is reauthorized prior to March 31, 1986. The only exception is for the continuation of contracts entered into prior to the beginning of the fiscal year. Would you tell us what contracts were entered into before October 1 and what work has been done under these contracts?

Mr. Hodel. The following tabulation lists the contracts and their status.

(The information follows:)

Garrison Diversion Unit
Contracts Prior to FY 1986

Contract	Date Awarded	Estimated Contract Value	Percent Complete
Repair work on McClusky Canal	5/17/85	$2,748,352	75
Boat Ramps and Toilet Facilities, McClusky Canal	8/23/85	97,655	50
New Rockford Office Facility	9/27/85	339,301	44
Fencing Wildlife Mitigation Tracts	9/25/85	334,027	40
New Rockford Canal, Reach 1A	8/5/85	8,471,074	26
New Rockford Canal, Reach 1B	1/17/83	7,599,574	96
Oakes Pumping Plant	4/29/82	3,695,816	98
Open and Pipe Drains, West Oakes Test Area	12/29/82	3,899,811	99
West Oakes Test Area Distribution System	7/22/85	9,959,781	16

Work accomplished on contracts:

Repair Work on McClusky Canal - Most slide areas have been excavated and rock stockpiled for placement.

Boat Ramps and Toilet Building - Work on grading and foundations have been completed and some work on toilet structures.

New Rockford Office Building - The foundation, structural steel frame, and roof are complete. Materials to complete the exterior of the building are at the jobsite.

Fencing Wildlife Mitigation Tracts - Accomplishment to date is the purchase of fencing materials.

New Rockford Canal, Reach 1A - Canal excavation, rights-of-way fencing, and construction of two bridges has started.

New Rockford Canal, Reach 1B - Only minor cleanup remains to be completed on this job.

Oakes Pumping Plant - Minor work to seal the discharge lines and landscaping remain to be completed on this job.

Open and Pipe Drains, West Oakes Test Area - Minor work on correcting pipe grades remains to be completed.

West Oakes Test Area Distribution System - Work on this job was initiated under a previous contract that was terminated pursuant to the suspension of work. Five bridges have been completed. Excavation for the inlet channel, Oakes Canal, and Lateral 0.20 is nearly complete.

Mr. Conte. Assuming that no reauthorization is enacted prior to March 31, what would be the proposed total work plan for FY 1986 and how much money would that require?

Mr. Hodel. The work plan would include the settlement of contractor claims; completion of essentially completed construction contracts; completion of a building in New Rockford, North Dakota; completion of wildlife mitigation fencing; and completion of a termination study with attendant environmental assessment. This termination study would inventory completed and partially completed facilities and assess requirements and impacts of either their preservation or disposition. The study results would be expected to evaluate funding and staffing requirements for fiscal year 1987 and beyond. We estimate that $14 million in fiscal year 1986 funding would be required to carry out the work plan. As of February 28, 1986, $9,829,036 has been expended on work accomplished in FY 1986.

Mr. Conte. The Fiscal Year 1987 budget requests slightly over $18 million for the shutdown and mothballing of the Garrison project. Why can that work not be completed out of existing funds during the current fiscal year, assuming of course that there is no reauthorization?

Mr. Hodel. Due to underfinancing and fund transfers, the fiscal year 1986 funds available for use on the Garrison Diversion Unit are adequate only for the work that would be contemplated for fiscal year 1986.

GARRISON DIVERSION UNIT

Mr. Conte. The intention of the language permitting work to continue on contracts entered into prior to October 1 for Garrison was to keep essential Bureau and contract staff on site until we could determine whether the reauthorization would proceed. If reauthorization does not occur by March 31 there would appear to be little point in continuing any work other than immediate mothballing of the project. Do you agree that no purpose would be served by further construction after March 31 unless the project is reauthorized?

Mr. Hodel. Generally, we agree there is little purpose in performing more construction work after March 31, 1986, if the project is not reauthorized. However, in some cases, it may be financially prudent to complete certain contracts rather than terminate them as well as expending funds to get the site in a safe condition.

WESTLANDS LITIGATION

Mr. Conte. One of the items in last year's Continuing Resolution was the controversy over the Department's settlement of the ongoing Westlands litigation. Would you comment on that status of that lawsuit, and explain why you believe that the proposed settlement is in the public interest?

Mr. Hodel. Several negotiation sessions have been held by the parties regarding a possible settlement of the litigation since the Continuing Resolution was passed. No agreement has been reached nor are we able to predict if one will be concluded. The Department of the Interior will not agree to any settlement that it does not consider to be in the public interest.

CENTRAL ARIZONA PROJECT

Mr. Conte. There has been some criticism in the press of the proposed cost-sharing agreement on the CAP. In particular, the claim has been made that the agreement would obligate the Government to a fixed schedule of construction on the project. If that schedule were not met because of insufficient funds or other reasons, then the cost-sharing obligation would be essentially forgiven. I am concerned that this type of agreement holds the Congress hostage for CAP appropriations at the price of losing the local contribution to the project or it holds the entire Bureau of Reclamation budget hostage for the completion of this single project. Would you comment on the CAP cost-sharing agreement?

Mr. Hodel. The proposed agreement is currently under review by the Administration. However, even under the worse case scenario from the Federal Government's perspective, the agreement would provide a saving of about $103 million.

PROCUREMENT OF EXTRA HIGH-VOLTAGE EQUIPMENT

Mr. Conte. As you may know, last year's Energy and Water Appropriations Act imposed a 25 percent Buy American differential on the procurement of extra high-voltage electrical equipment by the Power Marketing Administrations and the TVA. Has the Department of Interior or any of its components purchased any EHV equipment during the past five years? If so, from whom, and in what amounts? And do you anticipate any EHV purchases during the next several years?

Mr. Hodel. The procurement differential to which you refer did not include the Bureau of Reclamation. However, Reclamation's purchase of extra high-voltage equipment (equipment with capacity greater than the 242 kilovolts industry standard) is not significant. Such equipment would normally be associated with electric power transmission systems, and those were transferred to the Western Area Power Administration with the establishment of the Department of Energy. We have no plans for procurement of such equipment in the near future.

KESTERSON RESERVOIR CLEANUP

Mr. Conte. Would you comment on the Department's efforts in connection with the Kesterson Reservoir clean-up, and on reports that similar contamination is apparently a problem associated with other Bureau of Reclamation projects?

Mr. Hodel. On February 5, 1985, the California Water Resources Control Board issued an order (85-1) directing the Bureau of Reclamation to develop a plan within 150 days and complete cleanup within 3 years. A framework plan was submitted to the California Water Resources Control Board on July 5, 1985. A draft Environmental Impact Statement (EIS) is scheduled for public release on April 18, 1986, and will include alternative clean-up plans for Kesterson Reservoir, impacts of the alternative plans, and a comparison of the alternative plans. The final EIS is scheduled for release in September 1986 and the recommended closure plan and post-closure maintenance plan will be submitted on December 1, 1986, to the State Water Resources Control Board.

The alternative cleanup plans have not had final review or approval at this time. To meet the February 5, 1988, Kesterson Reservoir cleanup deadline imposed by the State Water Resources Control Board, it is likely to be necessary to start the cleanup as early as possible during Fiscal Year 1987 after the State Water Resources Control Board has approved the plan. However, the amounts shown in the Fiscal Year 1987 Budget Justification address only the costs for developing a plan and for preparation of an EIS for the cleanup and closure of Kesterson Reservoir; no costs for implementation of cleanup activities are included.

We do not know the full areal extent of the selenium contamination problem nor the number of facilities of the Central Valley Project which are affected at this time.

Regarding the possibility of irrigation-induced water quality problems related to other Bureau of Reclamation projects, we have no reports indicating toxic effects to fish and wildlife from selenium at other projects. However, we are pursuing this concern by taking a comprehensive look at irrigation water quality and its effects in other areas involving Department of Interior responsibilities. In December 1985 the Department of the Interior released a management strategy for addressing irrigation drainage quality issues. As part of the implementation of this strategy, Interior has identified 19 areas in 14 States for further study and evaluation. The February progress report on the Department's Irrigation Drainage Program provides more detailed information on this matter; a copy is being forwarded to you under separate cover.

JETTY PROJECT AT OREGON INLET

Mr. Conte. As you know, the Department of Interior has continually opposed efforts by the Corps of Engineers to construct a jetty project at Oregon Inlet, North Carolina, using adjacent properties under the jurisdiction of the Interior Department. Does the Department continue to oppose such use of Interior properties, and would you provide for the record the reason for such opposition?

Mr. Hodel. Based on our understanding of the project, we have previously opposed it as being incompatible with the purposes of Cape Hatteras National Seashore and Pea Island National Wildlife Refuge. However, in response to a bi-partisan congressional request, we are reviewing the facts to see if it is appropriate to reconsider our position.

Questions Submitted by the Hon. Lindy Boggs

OCS Leasing

Mrs. Boggs. Mr. Secretary, could you please bring us up-to-date on the activities of the ad hoc negotiations on California OCS leasing. How would you assess what is going on?

Mr. Hodel. Through March 6, 1986, we have met on the Hill four times since the enactment of the fiscal year 1986 Continuing Resolution in December 1985 which required that we participate in consultations on California OCS leasing issues. Two other staff sessions have also been held.

During these sessions, we presented information on the requirements and development of the proposed 5-year program, the lease sale process in general, and more specifically, the schedules for the first step in the process for the next proposed Southern and Northern California sales. We have also described oil and gas exploration fundamentals and presented a description of California OCS geology. We have been working on developing an information book on a wide range of topics to ensure that the consultation efforts proceed using correct information. Representatives from the State and local governments made presentations at the March 5, 1986 session.

Mrs. Boggs. How do these negotiations fit into the OCS Lands Act?

Mr. Hodel. These meetings do provide an avenue which expands the [illegible] extensive consultative procedures required by the Act and supplementary procedures employed by the Department. If the meetings reach an accord, one option is that the 5-year OCS leasing program, pursuant to Section 18 of the Act, could reflect that accord. In either case, after that process the remainder of the OCS Lands Act procedures, including its Section 19 consultation process, will be utilized.

Section 8(g) Negotiations

Mrs. Boggs. What is the Administrations's current position regarding resolution of the Section 8(g) issue? I understand the House and Senate conferees on the reconciliation bill are close to an agreement. If an agreement is reached that generally follows the one under discussion, what will the Reagan Administration's position be?

Mr. Hodel. The Administration's position is that Section 8(g) was enacted in order to compensate States for drainage of State resources from wells on Federal leases. In order to settle this longstanding dispute, however, the Administration did propose a legislative solution in March 1985 that was greatly expanded by the Congress. As a result, the language in the reconciliation bill is unacceptable to the Administration. Not only are the costs associated with the 8(g) issue far too excessive, but the Congress has added amendments to Section 19 of the Outer Continental Shelf Lands Act, provisions for an ocean and coastal resources block grant program, so-called "Buy America" provisions, and conference report language that would expressly make the 8(g) provision retroactive by including pre-1978 leases. There have been a number of proposed compromises raised regarding the OCS provisions of the reconciliation bill. We are currently working with both bodies in an attempt to delete from the bill the OCS provisions extraneous to the 8(g) issue and to fashion an 8(g) settlement that is fair to both the coastal States involved and the American people as a whole.

PROGRAM HIGHLIGHT STATEMENT
FISCAL YEAR 1987

Reclamation Mission

The mission of the Bureau of Reclamation is to assist non-Federal entities and other Federal agencies in developing and conserving the Nation's water resources quality for municipal and industrial, agricultural, hydroelectric power, and recreational uses by means of environmentally and economically sound water projects in the 17 Western States in a way that will improve the quality of life and stimulate local, regional, and national economies.

Reclamation Program

The budget authority requested for the Bureau of Reclamation's six separate appropriations, the working capital fund, and the permanent appropriations totals $906,383,000. This does not include $28,062,000 in funds contributed by non-Federal entities. The six appropriations are General Investigations, Construction Program, Operation and Maintenance, Loan Program, General Administrative Expenses, and Emergency Fund. A brief description of Reclamation's fiscal year 1987 request by each appropriation is summarized below.

General Investigations

The budget for General Investigations (GI) activities totals $27,820,000. This appropriation finances investigations of potential projects for the conservation and utilization of water, energy, and related land resources. It also finances the general engineering and research activities. Reclamation's involvement in these activities assures that water and related resources development in the arid West is planned in harmony with the Nation's needs. Many projects are interstate or of such broad scope that State and local entities are unable to address the full range of technical complexities associated with comprehensive project development.

The GI program represents part of the continuing Federal investment in the identification and resolution of water related problems of concern to Federal and local interests. The Bureau's fiscal year 1987 request funds studies and research needed to meet identified water needs within the next decade, and projected long term needs. Included in the fiscal year 1987 request are four new plan formulation and three new advance planning studies.

In fiscal year 1987, the GI efforts will be concentrated on investigating ways to meet power, municipal, industrial, and irrigation water requirements; enhancing water quality; and general engineering and scientific studies to address critical problems associated with water projects. The Bureau will continue to examine ground water supplies, and consider possible improvements in water management.

Over the years, ground water management has become an increasingly important component of Bureau of Reclamation projects. All project investigations take into account the conjunctive use of surface and aquifer safe yields to meet water demands. In fiscal year 1987 one proposed new start, the San Bernardino Ground Water Study will concentrate on groundwater problems. Reclamation also has three ongoing studies this year of particular interest. One is the Kansas River Basin Water Operations Study which will explore the possibilities of increasing water availability in the basin through the application of innovative water management techniques. The second study of interest is the Ground Water Recharge Demonstration Program authorized last year by P.L. 98-434. The purpose of this ground water recharge demonstration program is to study the potential for ground water recharge in the 17 Western States and to demonstrate artificial recharge technologies under a variety of hydrogeologic conditions. The third study is the Pima County/Santa Cruz River Ground Water Project which will study plans for the development and implementation of a groundwater recharge project in or near Tucson, Arizona.

The General Engineering and Research activity of the GI program consists of two major programs: Atmospheric Water Resources Management and Program Related Engineering and Scientic Studies (PRESS). The purpose of the Atmospheric Water Resources Management Program is to develop and verify cloud-seeding techniques to augment water supplies in critical watershort areas of the Nation. Major efforts include continuing the randomized seeding experiments in the Sierra Nevada Mountains, assessing seeding opportunities in the Colorado River Basin, and continuing cooperative planning with State weather modification projects and other Federal research programs. Under the PRESS program, research studies directed toward solving water resources planning, design, construction, and operational problems will continue in the areas of water supply augmentation and conservation, water quality and ecology, planning, engineering and materials research, dam safety and advanced energy applications. Efforts will focus on studies of engineering concepts, materials, and techniques to develop better, lower-cost, more durable structures and dam safety research to develop technology to assure that existing and planned structures have the highest degree of safety.

Construction Program

The fiscal year 1987 budget request of $576,759,000 will fund both ongoing and proposed project initiatives which address the problems and needs of the Western United States water and power user communities. This funding level provides for data collection, design, and onsite construction work to proceed on 68 multipurpose water projects (61 ongoing and seven new initiatives -- up to six safety of dams, and one drainage and minor construction. The fiscal year 1987 construction budget is consistent with the Administration's existing water policy and the President's effort to provide for new economic development opportunities. During fiscal year 1987, non-Federal entities will provide an estimated $24.2 million in the form of a cash contribution.

Operation and Maintenance

The fiscal year 1987 Operation and Maintenance program of $150,000,000 is aimed at preserving operational and structural integrity of facilities, increasing productivity by uprating facilities on existing projects, minimizing present and future Federal cost of operation, maintenance, and repair or replacement of facilities, devising and employing ways to assure a quicker return on the Federal investment, and complying with high priority program requirements.

Of the $150 million requested for the total O&M program, $136.6 million will be used to fund the Operation and Maintenance of Facilities. This funding will permit the continuation of a reliable operation and maintenance program; maintain a timely and realistic replacement, addition, and extraordinary maintenance schedule, and provide a minimum preventive maintenance program. Doing timely rehabilitation and maintenance of existing projects/facilities extends their useful lives in a most cost effective manner. Reclamation powerplants, the majority of which have been in service for 30 or more years, now require major replacement of generating components. Uprating the generating capacities of power facilities will help meet present and future power needs more effectively.

The remaining $13.4 million will be used to administer the Associated Operation and Maintenance Programs during fiscal year 1987. It is under these programs that land, water, and power resources are managed to assure proper conservation, usage, and protection of the Federal investment in Bureau facilities. Emphasis will be on dam safety evaluation; flood control; erosion control; more efficient use of irrigation water on Reclamation projects; land use inventories; and administering water marketing contracts associated with Corps of Engineers' projects.

In addition to the continuation of the functions currently underway, the planned analyses and seismotectonic studies required to evaluate the safety of existing dams will be accomplished; erosion control work at three locations will be initiated; the Bureau's capability to conduct land use inventories will be moderately increased; and additional compliance checks associated with the Reclamation Reform Program will be performed. A particularly important work item is the design and replacement of needle valves at approximately 20 Reclamation dams. All needle valves will be investigated and replaced by jet-flow gates by FY 1991. In FY 1987, 60-inch jet-flow gates will be installed at Echo, Pathfinder, Tieton, and Seminoe Dams. Design and installation specification work, plus field investigations, will also take place in FY 1987 for Sumner, Boca, and McKay Dams. These replacements are vital to operator safety and prevention of operational failures and structural damage.

There is also non-Federal financial participation in the Operation and Maintenance program. The projected non-Federal funding for fiscal year 1987 is approximately $116.7 million ($107.1 million from operating revenues; $8.4 million from water user advances; $1.2 million from other non-Federal advances).

The requested Federal funding ($150 million) and the projected non-Federal funding ($116.7 million) bring the total estimated funding resources for fiscal year 1987 to approximately $266.7 million. Approximately 81 percent of the fiscal year 1987 total overall O&M is reimbursable.

Loan Program

The Loan Program of $39,941,000 is an essential element of Reclamation's water and related resources development program. The method used to develop some water projects necessitates the completion of ongoing loans in order to complete certain features of a project so that appropriate deliveries can be made to project beneficiaries. The proposed funding for fiscal year 1987 will maintain the ongoing loan program to meet scheduled commitments in fiscal year 1987, and permits the initiation of 3 loans on the assumption that appropriation ceiling for the Small Reclamation Projects Act is increased.

General Administrative Expenses

The General Administrative Expenses (GAE) appropriation request of $51,200,000 finances the Bureau's management. Management responsibilities are designated by law as non-reimbursable. Of the total, $49.2 million is recommended for general administration and $2 million for the FY 1987 portion of GAE major acquisitions commenced in prior years. Major acquisitions are defined as non-recurring purchases of $50,000 or more of equipment, large-scale contracts and services, and capital improvements to Bureau facilities which are not attributable to specific projects. Most major acquisitions are included under the Working Capital Fund.

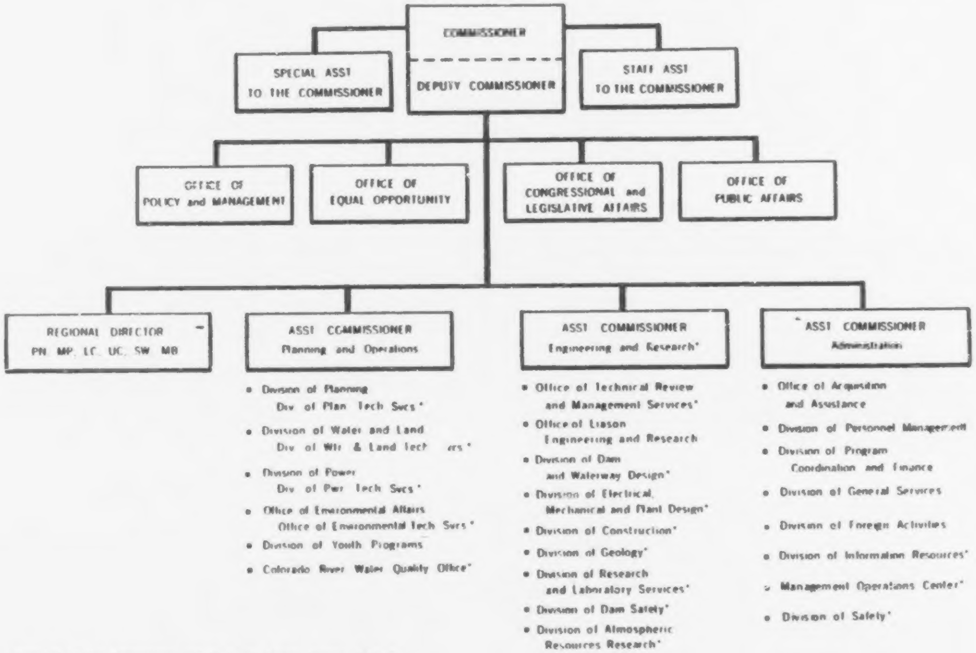
Emergency Fund

This fund of $1,000,000 is used to assure the continuous operation of all project facilities governed by the Federal Reclamation law in the event of unusual or emergency conditions; i.e., canal bank or generator failures, municipal and industrial water delivery system failures, damage to transmission lines, fires, floods, drought or conditions, causing or threatening to cause interruption in water or power service.

Working Capital Fund

The Working Capital Fund has been established pursuant to the provisions of Public Law 99-141, the FY 1986 Energy and Water Appropriation Act. The fund offers a more efficient and equitable means of financing centralized services available to projects and other beneficiaries. The $6,400,000 budget request for fiscal year 1987 will provide for continued acquisition of aided design and drafting system to be used bureauwide.

ORGANIZATION—BUREAU OF RECLAMATION


COMMISSIONER
DEPUTY COMMISSIONER
SPECIAL ASST TO THE COMMISSIONER
STAFF ASST TO THE COMMISSIONER
OFFICE OF POLICY and MANAGEMENT
OFFICE OF EQUAL OPPORTUNITY
OFFICE OF CONGRESSIONAL and LEGISLATIVE AFFAIRS
OFFICE OF PUBLIC AFFAIRS
REGIONAL DIRECTOR
PN MP LC UC SW MB
ASST COMMISSIONER
Planning and Operations
• Division of Planning
Div of Plan Tech Svcs*
• Division of Water and Land
Div of Wtr & Land Tech Svcs*
• Division of Power
Div of Pwr Tech Svcs*
• Office of Environmental Affairs
Office of Environmental Tech Svcs*
• Division of Youth Programs
• Colorado River Water Quality Office*
ASST COMMISSIONER
Engineering and Research*
• Office of Technical Review and Management Services*
• Office of Liason Engineering and Research
• Division of Dam and Waterway Design*
• Division of Electrical, Mechanical and Plant Design*
• Division of Construction*
• Division of Geology*
• Division of Research and Laboratory Services*
• Division of Dam Safety*
• Division of Atmospheric Resources Research*
ASST COMMISSIONER
Administration
• Office of Acquisition and Assistance
• Division of Personnel Management
• Division of Program Coordination and Finance
• Division of General Services
• Division of Foreign Activities
• Division of Information Resources*
• Management Operations Center*
• Division of Safety*

*Located at the Engineering and Research Center, Denver, Colorado

Bureau of Reclamation

SUMMARY OF BUDGET AUTHORITY BY ACCOUNT

Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Account title	Fiscal year 1986							Fiscal year 1987			
	Appro-priation	Public Law 99-177 reduction (Gramm-Rudman)	Appropriation adjusted for P.L. 99-177	Applied revenue/ Prior Year Funds	Proposed deferral	Non-Federal advances	Total Program	Appro-priation	Applied revenue/ Prior Year Funds	Non-Federal advances	Total program
General Investigations	$ 34,036	1,464	32,571	$ 637	$ ---	$ 1,203	$ 34,411	$ 27,820	$ ---	$ 1,679	$ 29,499
Construction Program	521,700	22,433	499,267	1/ 99,661	---	11,721	610,649	576,759	---	24,224	600,983
Operation and Maintenance	132,665	5,705	126,960	133,792	---	8,289	269,041	150,000	107,054	9,656	266,710
Loan Program	39,315	1,691	37,624	17,501	-7,000	---	48,125	39,941	7,000	---	46,941
Emergency Fund	1,000	43	957	44	---	---	1,001	1,000	---	---	1,000
General Administrative Expenses	49,200	2,116	47,084	16,143	---	---	63,227	51,200	---	---	51,200
Miscellaneous Permanent	350	15	335	---	---	---	335	350	---	---	350
Colo. River Dam Fund 2/	20,860	897	19,953	6,500	---	---	26,453	52,913	687	---	53,000
Working Capital Fund	---	---	---	---	---	---	---	6,400	---	---	6,400
Subtotal - All Appropriations	$799,115	34,364	764,751	$ 274,278	$ -7,000	$ 21,213	$1,053,242	$ 906,383	$ 114,741	$ 35,559	$1,056,683
Trust Funds	16,306							28,062			
TOTAL-BUDGET AUTHORITY	$815,421							$ 934,445			

1/ Excludes prior year funds of $8.1 million for Teton claims.

2/ Includes new budget authority of $18,850,000 in FY 1996 and $51,600,000 in FY 1987 for operation and maintenance activities on the Boulder Canyon Project. These are explained in the Operation and Maintenance Appropriation section.

BUREAU OF RECLAMATION
SUMMARY OF ANTICIPATED OUTLAYS BY ACCOUNT

(In thousands of dollars)

Account	FY 1986			FY 1987 1/
	Outlays	P.L. 99-177 Reduction (Gramm-Rudman)	Outlays Adjusted for P.L. 99-177	
General Investigations	$ 36,000	$ 1,084	$ 34,916	$ 29,820
Construction Program	705,000	15,700	689,300	631,201
Operation and Maintenance	156,850 2/	10,501	146,349	192,600 3/
Loan Program	50,000	1,014	48,986	49,009
Emergency Fund	1,000	26	974	1,000
General Administrative Expenses	65,000	1,906	63,094	54,000
Permanent Appropriations	2,350	43	2,307	2,350
Working Capital Fund	---	---	---	6,400
Subtotal - All Appropriations	1,016,200	30,274	985,926	966,380
Trust Funds	16,741	---	16,741	28,062
TOTAL - OUTLAYS	$1,032,941	$ 30,274	$1,002,667	$ 994,442

1/ Outlays as shown reflect effects of reduced budget authority in FY 1986 as required by Public Law 99-177 (Gramm-Rudman).
2/ Includes $138,000,000 for regular annually appropriated O&M outlays and $18,850,000 for the Colorado River Dam Fund.
3/ Includes $144,000,000 for regular annually appropriated O&M outlays and $48,600,000 for the Colorado River Dam Fund.

GENERAL INVESTIGATIONS

INDEX - 1

Project or Item	Activity	Office or Region 1/	Page Number
Advance Planning Summary	Advance Planning	—	107a
Alamogordo Water Supply	Project Investigation	SW	17
All-American Canal Relocation	Project Investigation	LC	18
All-American Canal Relocation	Advance Planning	LC	108
Atmospheric Water Resources Management Program (AWRM) . .	General Engineering and Research .	E&RC	132e
AWRM - Assessment and Demonstration of Technology	General Engineering and Research .	ER&C	132h
AWRM - Comprehensive Development and Adaptation of Technology	General Engineering and Research .	E&RC	132f
AWRM - Program Management and State and Local Assistance	General Engineering and Research .	ER&C	132i
Bedias Project, Texas Basins Project	Project Investigation	SW	19
Blue Holes Reservoir	Project Investigation	MB	21
CENDAK (Central South Dakota Water Supply System).	Project Investigation	MB	22
CENDAK (Central South Dakota Water Supply System).	Advance Planning	MB	113
Central Valley Fish and Wildlife Management Study	Special Investigation	MP	23
Colorado-Big Thompson Powerplant	Special Investigation	MB	25
Colorado Coastal Plains - Texas Basins Project	Advance Planning	SW	116
Colorado River Water Quality Improvement Program (CRWQIP)	Project Investigation	LC, UC, E&RC	26
CRWQIP - Program Coordination and Support Studies	Project Investigation	E&RC	36
CRWQIP - Big Sandy River Unit	Project Investigation	UC	28
CRWQIP - Big Sandy River Unit.	Advance Planning	UC	111
CRWQIP - Dirty Devil River Unit	Project Investigation	UC	29
CRWQIP - Dirty Devil River Unit	Advance Planning	UC	118
CRWQIP - Lower Gunnison Basin Unit	Project Investigation	UC	31
CRWQIP - Lower Gunnison Basin Unit	Advance Planning	UC	126

1/ Regional Offices:
PN - Pacific Northwest, Boise, Idaho
MP - Mid-Pacific, Sacramento, California
LC - Lower Colorado, Boulder City, Nevada
UC - Upper Colorado, Salt Lake City, Utah
SW - Southwest, Amarillo, Texas
MB - Missouri Basin, Billings, Montana

Other Offices: E&RC - Engineering and Research Center, Denver, Colorado

GENERAL INVESTIGATIONS

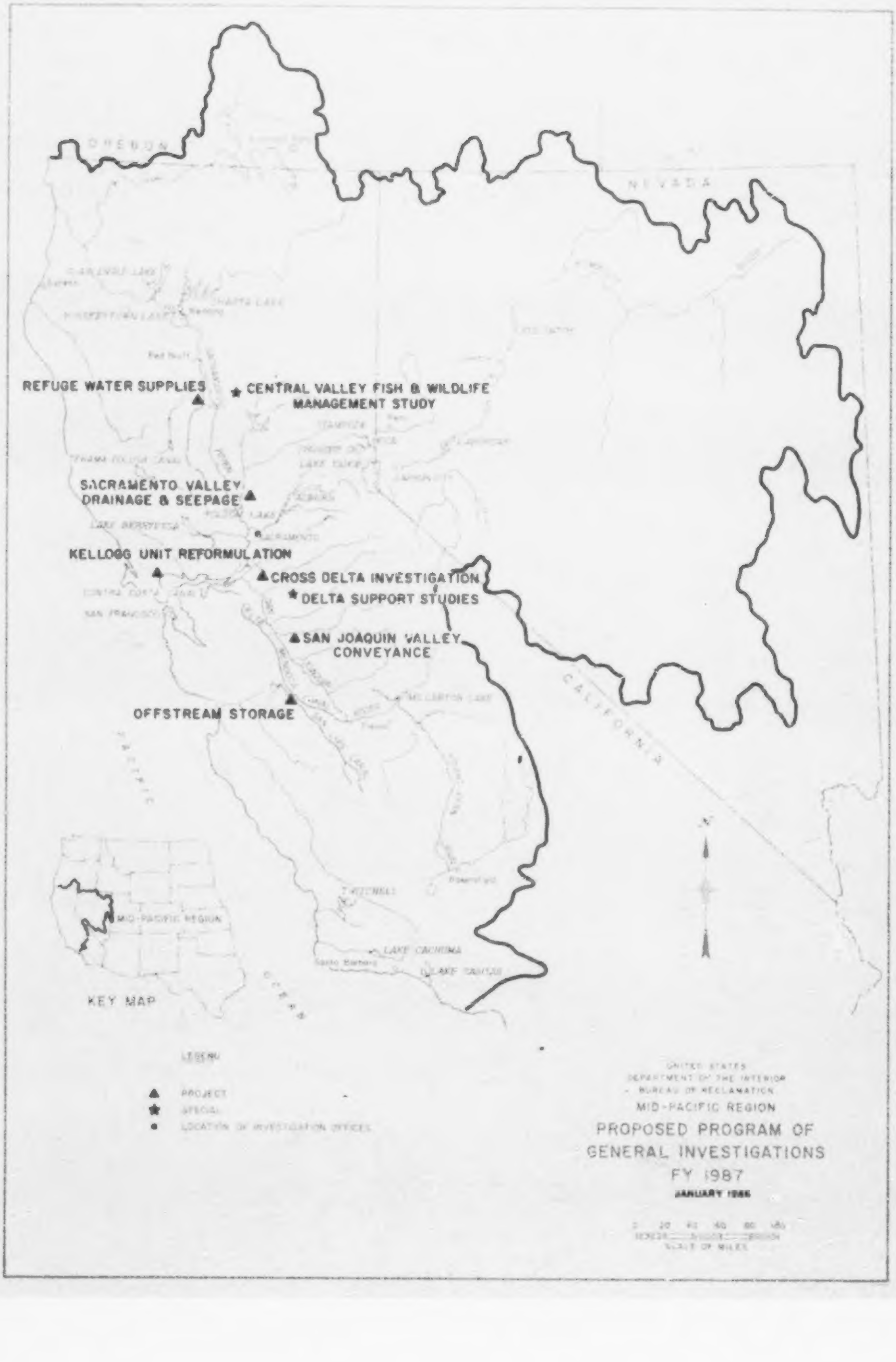
INDEX - 2

Project or Item	Activity	Office or Region	Page Number
CRWQIP - Lower Virgin River Unit	Project Investigation	LC	32
CRWQIP - Other Project Investigations	Project Investigation	UC, LC	33
CRWQIP - Palo Verde Irrigation District	Project Investigation	LC	34
CRWQIP - Price-San Rafael Rivers Unit	Project Investigation	UC	35
CRWQIP - Saline Water Use and Disposal Opportunities Unit - Saline Water Use Cooling Verification Program	Project Investigation	E&RC	38
CRWQIP - Saline Water Use and Disposal Opportunities Unit - (Aquatrain)	Project Investigation	UC	37
CRWQIP - San Juan River Unit	Project Investigation	UC	40
CRWQIP - Support Division	Project Investigation	LC	41
CRWQIP - Uinta Basin Unit	Project Investigation	UC	42
Cross Delta Investigation	Project Investigation	MP	44
Deep Carbonate Aquifer Project	Project Investigation	LC	46
Delta Support Studies	Project Investigation	MP	48
Deschutes River Basin Water Salvage Project	Special Investigation	PN	50
East Central Oklahoma Water Supply Study	Project Investigation	SW	51
Environmental and Interagency Coordination Activities . .	Special Investigation	All	53
Explanation of Difference between President's Budget and Budget Estimates	General Investigation	—	134
Flaming Gorge Unit (Colorado River Storage Project) . . .	Project Investigation	UC	54
Gallup-Navajo Indian Water Supply	Special Investigation	SW	55
General Planning Studies	Special Investigation	E&RC	56
General Statement	General Investigation	—	12
Gramm-Rudman Impacts	General Investigation	—	14
Groundwater Recharge Demonstration Program	Special Investigation	E&RC	57
High Mountain Aquifer Study	Special Investigation	MB	58
Imperial Irrigation District Canal Lining and System Improvement.	Project Investigation	LC	59
Investigations of Existing Projects	Special Investigation	All	61
Itemization of Estimates	General Investigations	—	133
Kansas River Basin Water Operations Study	Special Investigation	MB	62
Kellogg Unit Reformulation, Central Valley Project	Project Investigation	MP	63
Kiamichi Hydropower Study	Project Investigation	SW	64
Lake Andes-Wagner Unit	Advance Planning	MB	120

GENERAL INVESTIGATIONS

INDEX - 3

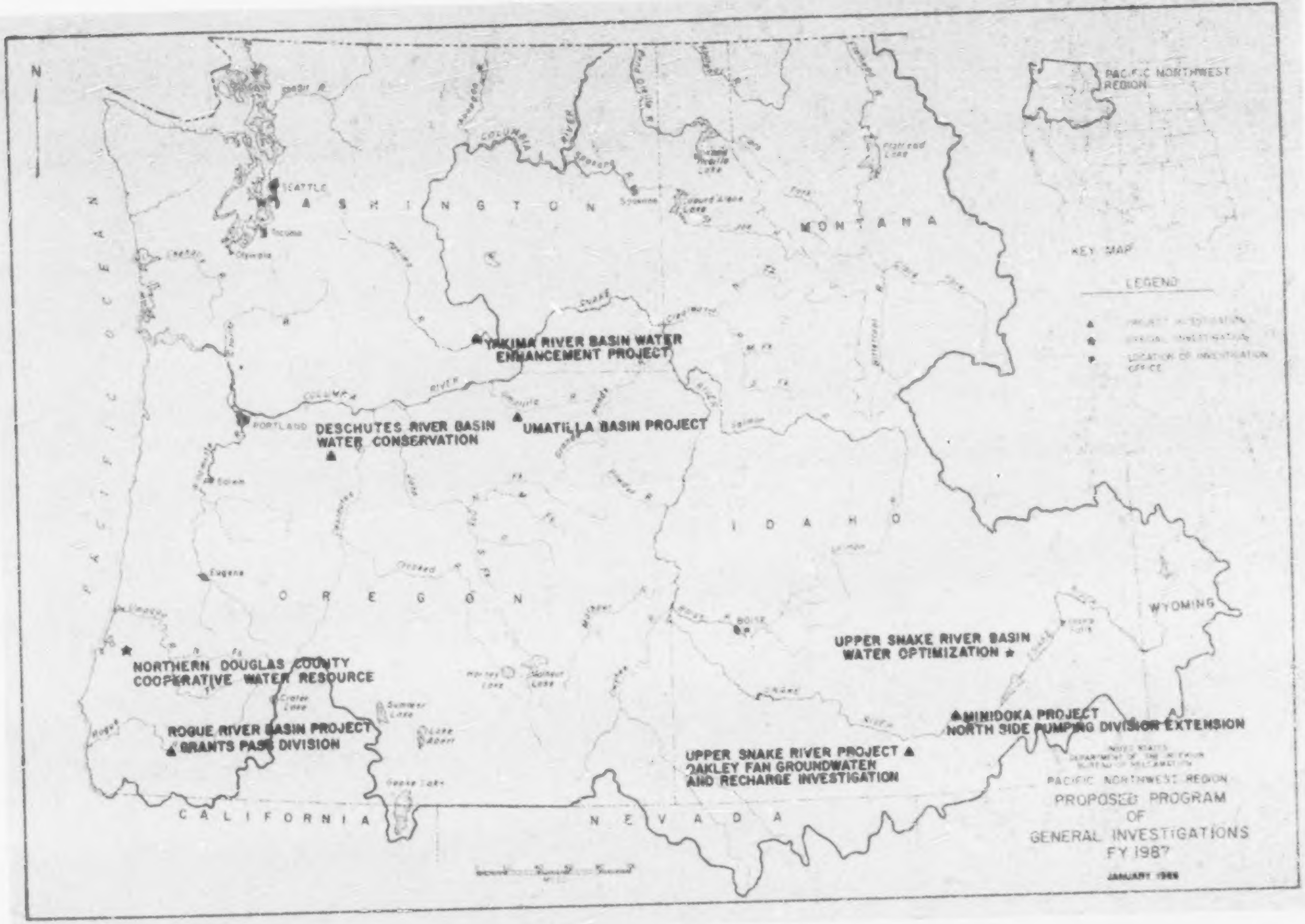
Project or Item	Activity	Office or Region 1/	Page Number
Loup River Basin	Special Investigation	MB	65
Lower Colorado Water Supply Project	Advance Planning	LC	123
Mesa-Delta M&I Ground Water Study	Special Investigation	UC	66
Milk River Water Supply Project, P-SMBP	Project Investigation	MB	68
Minidoka Project, North Side Pumping Division Extension	Project Investigation	PN	69
Minidoka Project, North Side Pumping Division Extension	Advance Planning	PN	128
Minor Work - Completed Project Investigations	Special Investigation	All	70
North Platte River Hydroelectric Power	Project Investigation	MB	71a
North Umpqua River Basin Water Resources Management . . .	Special Investigation	PN	71
Northern Douglas County Cooperative Water Resources Study	Special Investigation	PN	71
Northwest Oklahoma Water Supply	Project Investigation	SW	72
Oakley Fan Groundwater and Recharge Investigation	Project Investigation	PN	74
Offstream Storage.	Project Investigation	MP	76
Pima County/Santa Cruz River Ground Water Project	Project Investigation	LC	78
Platte River Water Use Options	Special Investigation	MB	80
Pojoaque Valley Groundwater	Special Investigation	SW	81
Prairie Bend Unit	Project Investigation	MB	82
Program Related Engineering and Scientific Studies (PRESS)	General Engineering and Research .	E&RC	132j
PRESS - Advance Energy Application	General Engineering and Research .	E&RC	132m
PRESS - Dam Safety	General Engineering and Research .	E&RC	132n
PRESS - Engineering and Materials	General Engineering and Research .	E&RC	132l
PRESS - Laboratory and Plant Equipment and Maintenance . .	General Engineering and Research .	E&RC	132o
PRESS - Planning Research	General Engineering and Research .	E&RC	132l
PRESS - Water Quality and Ecology	General Engineering and Research .	E&RC	132k
PRESS - Water Supply Augmentation and Conservation	General Engineering and Research .	E&RC	132k
Refuge Water Supplies	Project Investigation	MP	84
San Bernardino Valley Ground Water Project	Project Investigation	LC	86
San Jacinto Project, Texas Basins Projects, ...	Project Investigation	SW	88
San Joaquin Valley Conveyance Study Central Valley Project	Project Investigation	MP	90


OREGON
NEVADA
CALIFORNIA
PACIFIC
OCEAN
SHASTA LAKE
Redding
Red Bluff
REFUGE WATER SUPPLIES
CENTRAL VALLEY FISH & WILDLIFE MANAGEMENT STUDY
TEHAMA-COLUSA CANAL
LAKE TAHOE
CARSON CITY
SACRAMENTO VALLEY DRAINAGE & SEEPAGE
FOLSOM LAKE
LAKE BERRYESSA
SACRAMENTO
KELLOGG UNIT REFORMULATION
CROSS DELTA INVESTIGATION
DELTA SUPPORT STUDIES
SAN FRANCISCO
SAN JOAQUIN VALLEY CONVEYANCE
OFFSTREAM STORAGE
MILLERTON LAKE
Fresno
Bakersfield
LAKE CACHUMA
Santa Barbara
KEY MAP
MID-PACIFIC REGION
LEGEND
▲ PROJECT
★ SPECIAL
● LOCATION OF INVESTIGATION OFFICES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
PROPOSED PROGRAM OF
GENERAL INVESTIGATIONS
FY 1987
JANUARY 1986
SCALE OF MILES

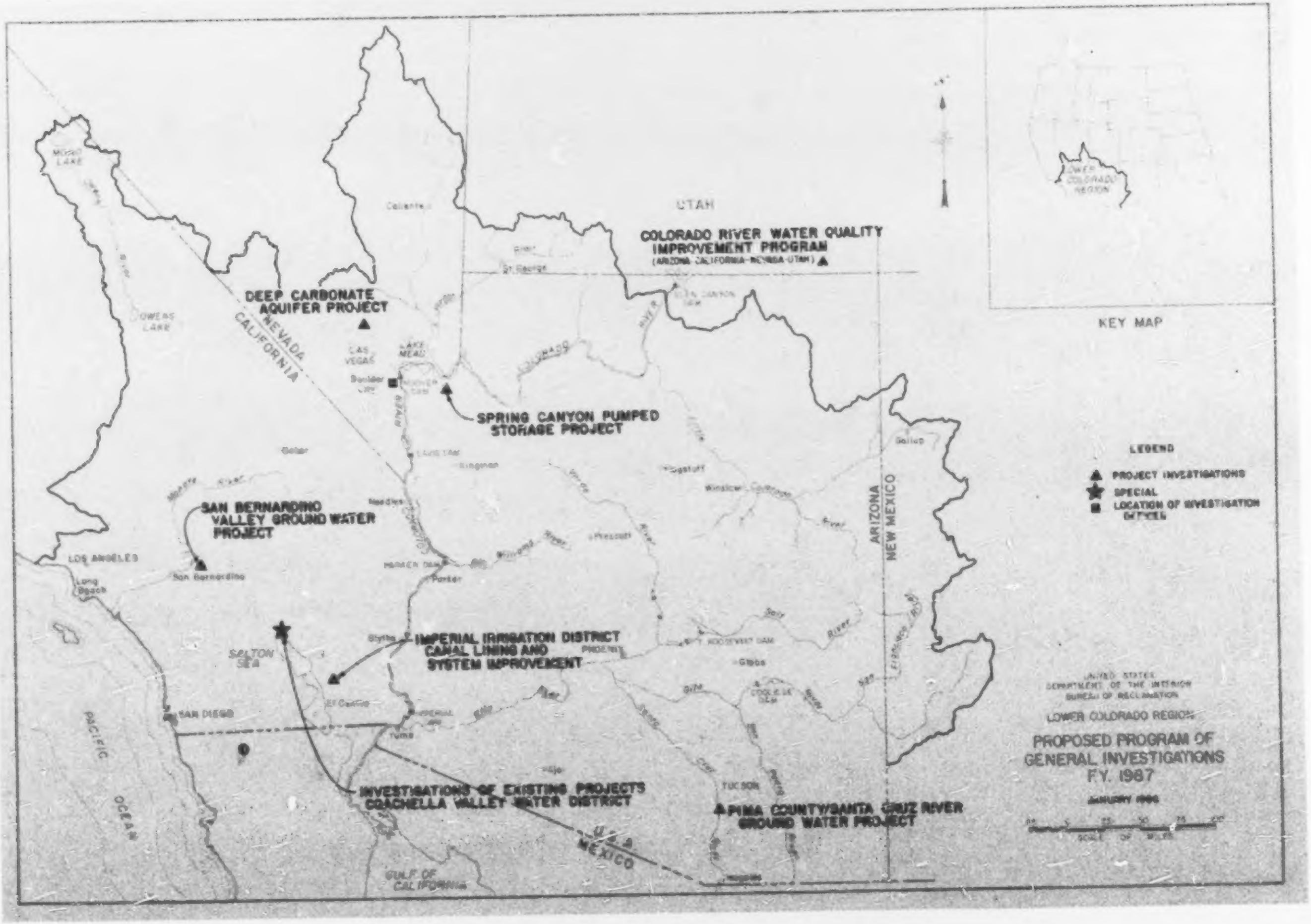
GENERAL INVESTIGATIONS

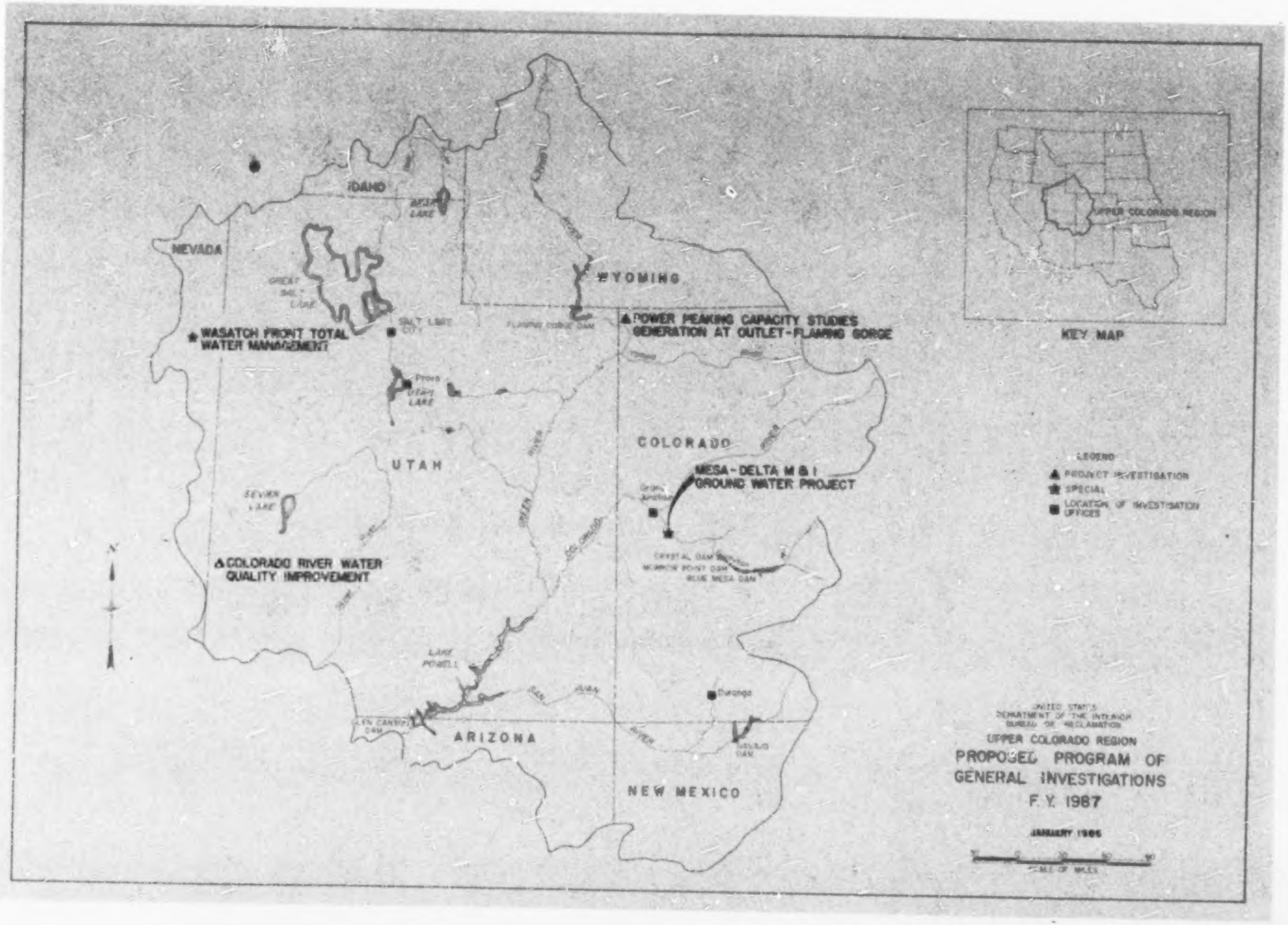
INDEX - 4

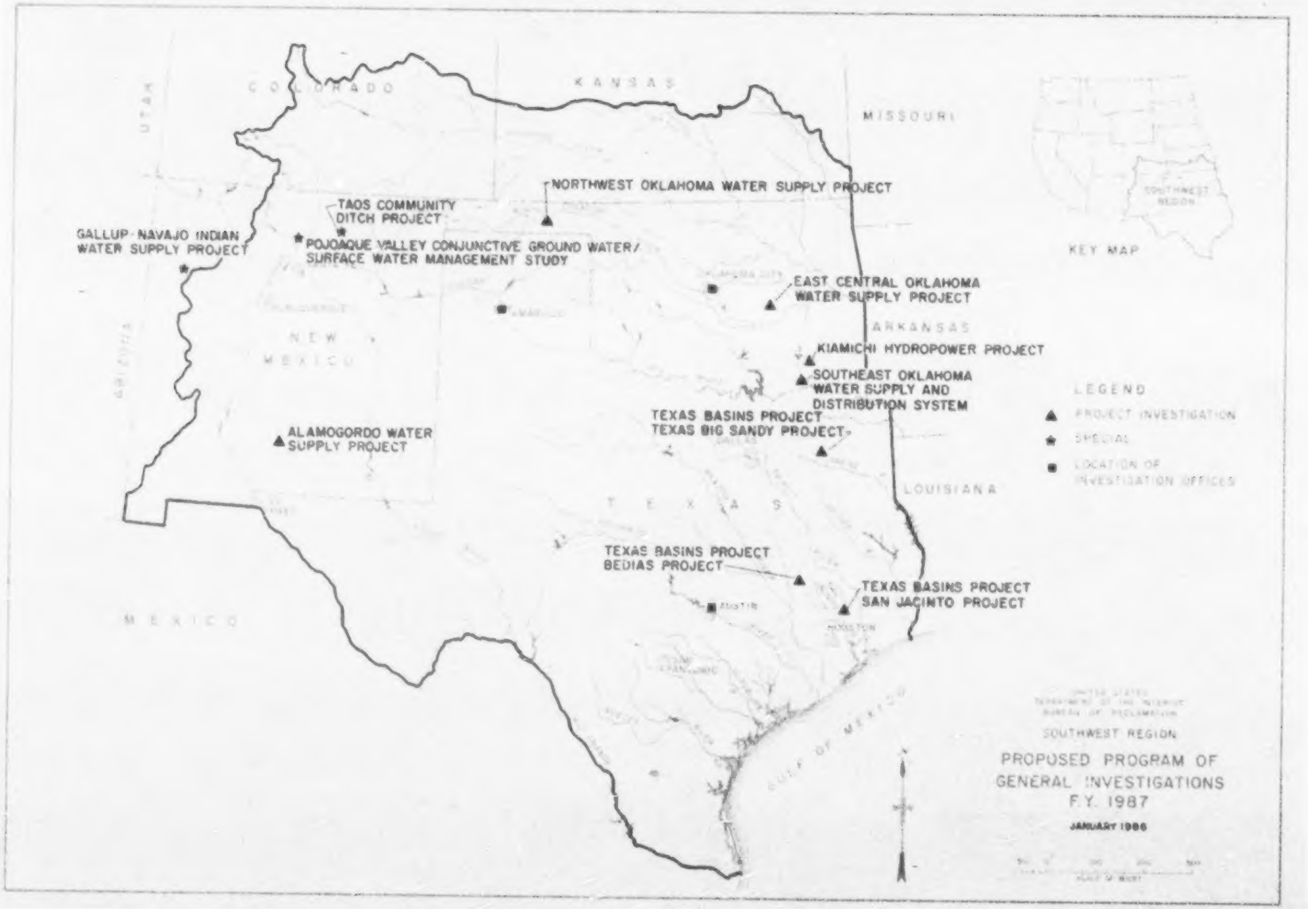
Project or Item	Activity	Office or Region 1/	Page Number
Santa Margarita Project	Project Investigation	LC	92
Seminoe Dam Modification	Special Investigation	MB	93
South Dakota Water Delivery Study	Project Investigation	MB	94
Southeast Oklahoma Water Supply Study	Project Investigation	SW	95
South Platte River Operations Study	Special Investigation	MB	96
Spring Canyon Pumped Storage Project	Project Investigaiton	LC	97
Summary of Activities	General Investigation	—	15
Taos Community Ditch Evaluation	Special Investigation	SW	99
Technical Assistance to States	Special Investigation	All	100
Texas Big Sandy Project, Texas Basins Project	Project Investigation	SW	101
Umatilla Basin Project	Project Investigation	PN	102
Umatilla Basin Project	Advance Planning	PN	131
Umpqua River Basin Water Resources Management Study (see Northern Douglas)	Special Investigation	PN	71
Upper Snake River Basin Storage	Special Investigation	PN	103
Wasatch Front Total Water Management	Special Investigation	UC	104
Westside Irrigation Project	Project Investigation	MB	106
Yakima River Basin Water Enhancement Project	Project Investigation	PN	107
Yakima River Basin Water Enhancement Project	Advance Planning	PN	132b

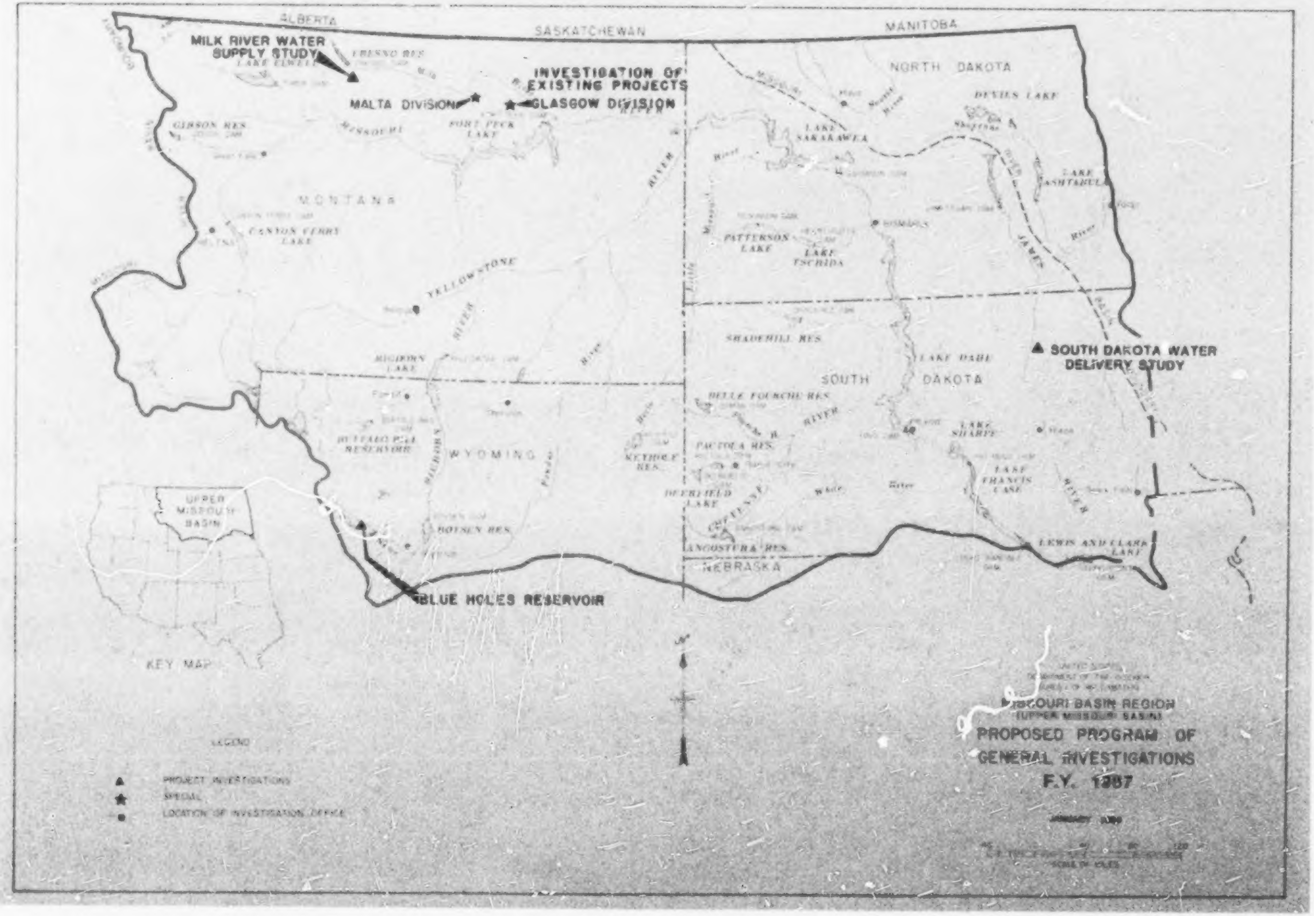

N
PACIFIC OCEAN
WASHINGTON
OREGON
IDAHO
MONTANA
WYOMING
CALIFORNIA
NEVADA
SEATTLE
Tacoma
Olympia
PORTLAND
Salem
Eugene
Spokane
BOISE
COLUMBIA RIVER
SNAKE
Crater Lake
Summer Lake
Lake Abert
Goose Lake
Flathead Lake
KEY MAP
PACIFIC NORTHWEST REGION
LEGEND
▲ PROJECT INVESTIGATION
★ SPECIAL INVESTIGATION
● LOCATION OF INVESTIGATION OFFICE
YAKIMA RIVER BASIN WATER ENHANCEMENT PROJECT
DESCHUTES RIVER BASIN WATER CONSERVATION
UMATILLA BASIN PROJECT
NORTHERN DOUGLAS COUNTY COOPERATIVE WATER RESOURCE
ROGUE RIVER BASIN PROJECT GRANTS PASS DIVISION
UPPER SNAKE RIVER BASIN WATER OPTIMIZATION
MINIDOKA PROJECT NORTH SIDE PUMPING DIVISION EXTENSION
UPPER SNAKE RIVER PROJECT OAKLEY FAN GROUNDWATER AND RECHARGE INVESTIGATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
PROPOSED PROGRAM
OF
GENERAL INVESTIGATIONS
FY 1987
JANUARY 1986


UTAH
COLORADO RIVER WATER QUALITY IMPROVEMENT PROGRAM (ARIZONA-CALIFORNIA-NEVADA-UTAH)
KEY MAP
LOWER COLORADO REGION
DEEP CARBONATE AQUIFER PROJECT
NEVADA
CALIFORNIA
MONO LAKE
OWENS LAKE
Caliente
St. George
GLEN CANYON DAM
LAS VEGAS
LAKE MEAD
Boulder City
HOOVER DAM
SPRING CANYON PUMPED STORAGE PROJECT
Kingman
Flagstaff
Winslow
Gallup
ARIZONA
NEW MEXICO
Needles
SAN BERNARDINO VALLEY GROUND WATER PROJECT
LOS ANGELES
Long Beach
San Bernardino
PARKER DAM
Parker
Prescott
IMPERIAL IRRIGATION DISTRICT CANAL LINING AND SYSTEM IMPROVEMENT
Blythe
SALTON SEA
PHOENIX
ROOSEVELT DAM
Globe
COOLIDGE DAM
El Centro
SAN DIEGO
IMPERIAL DAM
Yuma
PACIFIC OCEAN
Ajo
TUCSON
INVESTIGATIONS OF EXISTING PROJECTS COACHELLA VALLEY WATER DISTRICT
PIMA COUNTY/SANTA CRUZ RIVER GROUND WATER PROJECT
U.S.A.
MEXICO
GULF OF CALIFORNIA
LEGEND
▲ PROJECT INVESTIGATIONS
★ SPECIAL
■ LOCATION OF INVESTIGATION OFFICES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
PROPOSED PROGRAM OF GENERAL INVESTIGATIONS F.Y. 1987
JANUARY 1986
SCALE OF MILES


IDAHO
BEAR LAKE
NEVADA
GREAT SALT LAKE
WYOMING
FLAMING GORGE DAM
POWER PEAKING CAPACITY STUDIES GENERATION AT OUTLET-FLAMING GORGE
WASATCH FRONT TOTAL WATER MANAGEMENT
SALT LAKE CITY
Provo
UTAH LAKE
COLORADO
UTAH
GREEN RIVER
COLORADO
MESA-DELTA M & I GROUND WATER PROJECT
Grand Junction
SEVIER LAKE
COLORADO RIVER WATER QUALITY IMPROVEMENT
CRYSTAL DAM
MORROW POINT DAM
BLUE MESA DAM
N
LAKE POWELL
SAN JUAN RIVER
Durango
GLEN CANYON DAM
ARIZONA
NAVAJO DAM
NEW MEXICO
UPPER COLORADO REGION
KEY MAP
LEGEND
▲ PROJECT INVESTIGATION
★ SPECIAL
■ LOCATION OF INVESTIGATION OFFICES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
PROPOSED PROGRAM OF
GENERAL INVESTIGATIONS
F.Y. 1987
JANUARY 1986
SCALE OF MILES


COLORADO
KANSAS
UTAH
MISSOURI
NORTHWEST OKLAHOMA WATER SUPPLY PROJECT
TAOS COMMUNITY DITCH PROJECT
GALLUP-NAVAJO INDIAN WATER SUPPLY PROJECT
POJOAQUE VALLEY CONJUNCTIVE GROUND WATER/SURFACE WATER MANAGEMENT STUDY
OKLAHOMA CITY
EAST CENTRAL OKLAHOMA WATER SUPPLY PROJECT
AMARILLO
ARIZONA
ARKANSAS
NEW MEXICO
KIAMICHI HYDROPOWER PROJECT
SOUTHEAST OKLAHOMA WATER SUPPLY AND DISTRIBUTION SYSTEM
TEXAS BASINS PROJECT TEXAS BIG SANDY PROJECT
ALAMOGORDO WATER SUPPLY PROJECT
DALLAS
LOUISIANA
TEXAS
TEXAS BASINS PROJECT BEDIAS PROJECT
TEXAS BASINS PROJECT SAN JACINTO PROJECT
AUSTIN
HOUSTON
MEXICO
GULF OF MEXICO
KEY MAP
SOUTHWEST REGION
LEGEND
▲ PROJECT INVESTIGATION
★ SPECIAL
■ LOCATION OF INVESTIGATION OFFICES
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION
SOUTHWEST REGION
PROPOSED PROGRAM OF GENERAL INVESTIGATIONS F.Y. 1987
JANUARY 1986
SCALE OF MILES

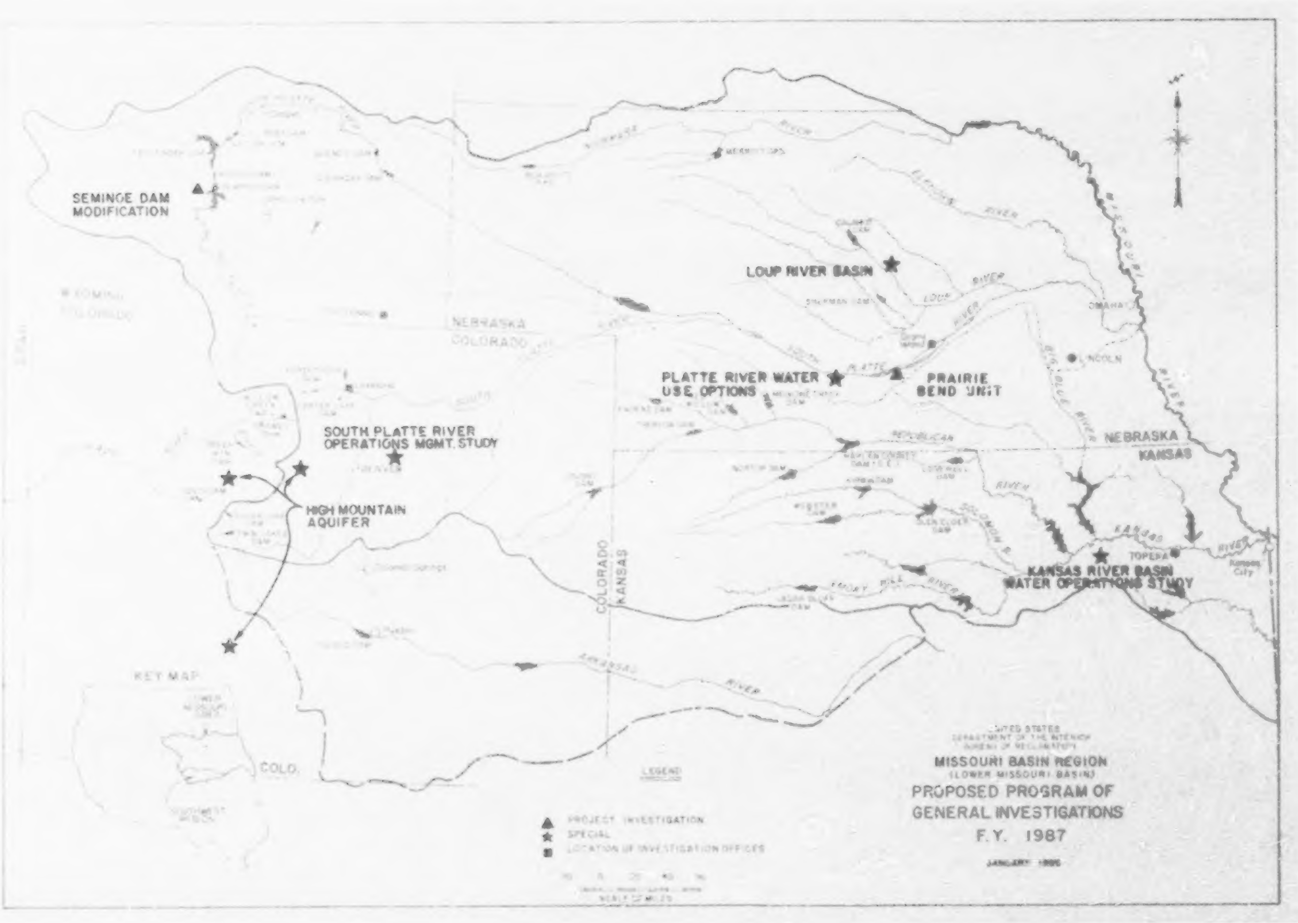


ALBERTA
SASKATCHEWAN
MANITOBA
MILK RIVER WATER SUPPLY STUDY
FRESNO RES.
LAKE ELWELL
INVESTIGATION OF EXISTING PROJECTS
MALTA DIVISION
GLASGOW DIVISION
GIBSON RES.
MISSOURI
FORT PECK LAKE
MONTANA
CANYON FERRY LAKE
HELENA
YELLOWSTONE
RIVER
BIGHORN LAKE
NORTH DAKOTA
DEVILS LAKE
LAKE SAKAKAWEA
LAKE ASHTABULA
BISMARCK
PATTERSON LAKE
LAKE TSCHIDA
JAMES
SHADEHILL RES.
LAKE OAHE
SOUTH DAKOTA WATER DELIVERY STUDY
SOUTH DAKOTA
BELLE FOURCHE RES.
PACTOLA RES.
LAKE SHARPE
LAKE FRANCIS CASE
DEERFIELD LAKE
ANGOSTURA RES.
LEWIS AND CLARK LAKE
BUFFALO BILL RESERVOIR
WYOMING
BOYSEN RES.
KEYHOLE RES.
NEBRASKA
BLUE HOLES RESERVOIR
UPPER MISSOURI BASIN
KEY MAP
LEGEND
▲ PROJECT INVESTIGATIONS
★ SPECIAL
● LOCATION OF INVESTIGATION OFFICE
SCALE OF MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
(UPPER MISSOURI BASIN)

PROPOSED PROGRAM OF
GENERAL INVESTIGATIONS
F.Y. 1987

[illegible]


SEMINOE DAM MODIFICATION
LOUP RIVER BASIN
PLATTE RIVER WATER USE OPTIONS
PRAIRIE BEND UNIT
SOUTH PLATTE RIVER OPERATIONS MGMT. STUDY
HIGH MOUNTAIN AQUIFER
KANSAS RIVER BASIN WATER OPERATIONS STUDY
NEBRASKA
COLORADO
KANSAS
WYOMING
COLORADO
OMAHA
LINCOLN
TOPEKA
Kansas City
MISSOURI RIVER
LOUP RIVER
SOUTH PLATTE
REPUBLICAN
SOLOMON R.
KANSAS RIVER
ARKANSAS RIVER
KEY MAP
COLO.
LEGEND
PROJECT INVESTIGATION
SPECIAL
LOCATION OF INVESTIGATION OFFICES
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
(LOWER MISSOURI BASIN)
PROPOSED PROGRAM OF
GENERAL INVESTIGATIONS
F.Y. 1987
JANUARY 1986

GENERAL INVESTIGATIONS

General Statement

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$34,035,000 1/ 3/	
Application of Prior Year Funds	636,689	
Non-Federal Participation - Cash	1,203,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	-1,464,000	
Total Obligations, FY 1986		$34,410,689
Fiscal Year 1987:		
Estimate of Appropriation	$27,820,000 2/ 4/	
Non-Federal Participation - Cash	1,679,000	
Total Obligations, FY 1987		$29,499,000

1/ Includes the application of $1,175,000 in underfinancing.

2/ Includes the application of $1,179,000 in underfinancing.

3/ Excludes $6,308,000 of non-cash services.

4/ Excludes $5,033,000 of non-cash services.

GENERAL INVESTIGATIONS

General Statement

Congress appropriated $34,035,000 for General Investigations FY 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce its General Investigation allotments by $1,464,000. A tabulation showing the financial impact as it applies to each project is shown on page 14.

The appropriation for the General Investigations activity provides for the planning of potential developments for the conservation and utilization of water and related land resources throughout the 17 Western States. The three components of General Investigations are as follows:

A. Plan Formulation. - Plan formulation includes project investigations and special investigations.

Project investigations will develop plans for resource development and evaluate the engineering and economic viability and environmental acceptability of specific projects as a basis for recommendations to Congress for authorization of construction.

The Colorado River Water Quality Improvement Program is continuing as a project investigation. It is concerned with the development of plans and activities aimed at controlling increases in the salinity of the Colorado River system while optimizing water use. Emphasis has been placed on controlling salinity from point, diffuse, and irrigation sources and in improving water management practices.

Special investigations will continue to include activities related to rehabilitation and betterment studies of existing projects, minor work on completed investigations, water management studies, water conservation studies, environmental studies, interagency coordination, and needed work on plans of study as a prerequisite to enable recommendations for new project investigations.

Included are funds for the initiation of the following investigations in FY 1987 which have strong local support, enjoy good potential for development, and have a high potential for non-Federal financial support. The proposed new investigations are:

1. Deschutes River Basin Water Salvage Project - Oregon (Special Investigation)
2. San Bernardino Valley Ground Water Project - California (Project Investigation)
3. South Platte River Operations Study - Colorado (Special Investigation)
4. Upper Snake River Basin Storage Optimization - Idaho (Special Investigation)

B. Advance Planning. - As the second stage of the planning process, studies will be performed on projects that are viable for implementation but require additional studies toward finalizing a definite plan. Utilizing this process will enable the Bureau of Reclamation to move immediately into preconstruction work with the appropriation of construction funds. It is intended that, once a project is authorized for construction by Congress, all advance planning funds expended will be fully reimbursable to the extent provided by Reclamation Law.

The advance planning will expedite implementation of worthy projects by enabling the continuation of preauthorization studies with the objective of complementing work on a definite project plan. Three new projects are scheduled to be initiated in FY 1987. The proposed new advance planning studies are:

1. Dirty Devil River Unit, CRWQIP, Utah

2. Umatilla Basin Project, Oregon

3. Yakima River Basin Water Enhancement Project, Washington

C. General Engineering and Research. - Studies are conducted to develop improved methods and materials for planning, design, construction, and operation and maintenance of Reclamation projects through a comprehensive applied research and development program. The efficiency of the planning, construction, operation, and maintenance programs; technical fields such as weather modification for augmenting water supplies and energy expansion through application of new technology; and dam safety techniques are improved significantly through this program.

The Program Related Engineering and Scientific Studies are directed toward solving problems involved in developing water-related resource. The research results in reduced costs, increased efficiency, reliability, and safety enhancement for water resource projects. Research categories include water supply augmentation and conservation, water quality and ecology, planning, engineering and materials, advanced energy applications, and dam safety.

The Atmospheric Water Resources Management program will demonstrate, through pilot project research, the feasibility of cloud seeding for precipitation management. These techniques will provide a significant alternative or accompanying technology for helping to meet critical national resource needs. Goals include increased water supplies and hydroelectric generation resulting from streamflow augmentation.

Reclamation's General Investigations allowance of $27,820,000 for FY 1987 represents a decrease of $6,215,000 from the FY 1986 Budget appropriation of $34,035,000.

The activity breakdown of work proposed in FY 1987 compares with the program for FY 1986 as shown in the "Summary by Activities" on the following page. Details of the proposed program are presented in the pages entitled "Schedule of General Investigations Program" which follow the "Summary by Activities".

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

General Investigations Program

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
ALAMOGORDO WATER SUPPLY STUDY	200,000	8,600	191,400
BEDIAS PROJECT	395,000	16,985	378,015
BLUE HOLES RESERVOIR	150,000	6,450	143,550
CENTRAL VALLEY FISH/WILDLIFE	487,000	20,941	466,059
COLO RIV WTR QUAL IMPRVMT PRGM	4,418,000	189,974	4,228,026
COLORADO-BIG THOMPSON PP	140,000	6,020	133,980
CROSS DELTA CONSTRICTION INVST	250,000	10,750	239,250
DEEP-CARBONATE AQUIFER INVSTGN	750,000	32,250	717,750
DELTA SUPPORT STUDIES	322,000	13,846	308,154
EAST CENTRAL OKLA WTR SUPPLY	300,000	12,900	287,100
ENVIR/INTERAGENCY COORD ACT	3,435,000	147,705	3,287,295
FLAMING GORGE - PEAKING, CRSP	50,000	2,150	47,850
GALLUP-NAVAJO SUPPLY PROJECT	200,000	8,600	191,400
GENERAL PLANNING STUDIES	420,000	18,060	401,940
GROUNDWATER RECHARGE DEMO PRGM	500,000	21,500	478,500
HIGH MOUNTAIN AQUIFER	100,000	4,300	95,700
IMPERIAL ID CANAL LINING	200,000	8,600	191,400
INVESTIGATION OF EXISTING PROJ	158,000	6,794	151,206
KANSAS RIV BASIN WTR MGMT STDY	115,000	4,945	110,055
KELLOGG UNT REFORMULATION, CVP	68,000	2,924	65,076
KIAMICHI HYDROPOWER STUDY	300,000	12,900	287,100
LOUP RIVER BASIN STUDY	100,000	4,300	95,700
MESA-DELTA M/I GRDWTR STUDY	515,000	22,145	492,855
MILK RIVER WATER SUPPLY,P-SMBP	140,000	6,020	133,980
MINIDOKA NORTH SIDE PUMPING	50,000	2,150	47,850
MINOR WORK ON CMPLTD INVSTGNS	535,000	23,005	511,995
N DOUGLAS CO COOP WTR RES STDY	170,000	7,310	162,690
NW OKLAHOMA WTR SUPPLY STUDIES	185,000	7,955	177,045
OAKLEY FAN GRDWTR/RECHRG INVST	150,000	6,450	143,550
OFF-STREAM STORAGE	150,000	6,450	143,550
PIMA CO/SANTA CRUZ RIV GRDWTR	100,000	4,300	95,700
PLATTE RIV WTR USE OPTS, P-S	77,000	3,311	73,689
POJOAQUE VALLEY WATER STUDY	150,000	6,450	143,550

GENERAL INVESTIGATIONS

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
PRAIRIE BEND UNIT, P-SMBP	245,000	10,535	234,465
REFUGE WATER SUPPLIES	80,000	3,440	76,560
S DAKOTA WATER DELIVERY, P-S	50,000	2,150	47,850
SAN JACINTO PROJECT	275,000	11,825	263,175
SAN JOAQUIN VALLEY CONVEYANCE	743,000	31,949	711,051
SE OKLA WTR SUPPLY/DSTRB STDY	300,000	12,900	287,100
SPRING CANYON PUMP STORAGE	240,000	10,320	229,680
TAOS COMMUNITY DITCH EVAL	30,000	1,290	28,710
TECHNICAL ASSISTANCE TO STATES	1,500,000	64,500	1,435,500
TEXAS BIG SANDY PROJECT	320,000	13,760	306,240
UMATILLA BASIN PROJECT	250,000	10,750	239,250
WASATCH FRONT TOTAL WTR MGMT	240,000	10,320	229,680
WESTSIDE IRRIGATION PROJ, WY	100,000	4,300	95,700
YAKIMA RIVER BASIN WTR ENHNCMT	277,000	11,911	265,089
0 -- UNDERFINANCING -- 0	(875,000)	(37,625)	(837,375)
GEN INVESTIGATION-FORMULATION	19,055,000	819,860	18,235,140
ALL-AMERICAN CANAL RELOCATION	300,000	12,900	287,100
CENTRAL S DAKOTA WATER, P-SMBP	1,775,000	76,325	1,698,675
CRWQIP, BIG SANDY RIVER UNIT	1,000,000	43,000	957,000
CRWQIP, LOWER GUNNISON WSI	220,000	9,460	210,540
LOWER COLORADO WTR SUPPLY STDY	160,000	6,880	153,120
MINIDOKA NORTH SIDE PUMPING	225,000	9,675	215,325
TX BASINS, COLO COASTAL PLAINS	600,000	25,800	574,200
0 -- UNDERFINANCING -- 0	(300,000)	(12,900)	(287,100)
ADVANCE PLANNING	3,980,000	171,140	3,808,860
PLAN FORM AND ADVANCE PLAN	23,035,000	991,000	22,044,000
ATMOSPHERIC WATER RES MGT PRGM	6,100,000	262,300	5,837,700
PRGM RELATED ENGR/SCIENT STDYS	4,900,000	210,700	4,689,300
ENGINEERING/RESEARCH	11,000,000	473,000	10,527,000
GENERAL INVESTIGATIONS	34,035,000	1,464,000	32,571,000

SUMMARY OF ACTIVITIES

General Investigations

Activity	Estimated total	Total to September 30, 1985	Program FY 1986	Estimate FY 1987	Balance to complete
PLAN FORMULATION INVESTIGATIONS					
Project Investigations					
Reclamation Costs	$ 93,759,004	$ 56,540,671	$ 12,492,445	$ 8,757,000	$ 15,968,888
(Non-Federal)	12,947,000	3,475,618	3,468,000	2,441,000	3,562,382
(Other Federal)	258,000	258,000	-0-	-0-	-0-
Special Investigations					
Reclamation costs	28,215,254	3,777,626	9,797,628	9,063,000	5,557,000
(Non-Federal)	18,478,000	479,000	3,583,000	3,992,000	10,424,000
(Other Federal)	1,370,000	-0-	290,000	270,000	810,000
ADVANCE PLANNING					
Reclamation Costs	10,845,693	2,234,979	3,490,714	1,489,000	3,631,000
(Non-Federal)	1,746,000	268,000	460,000	279,000	739,000
(Other Federal)	-0-	-0-	-0-	-0-	-0-
GENERAL ENGINEERING AND RESEARCH					
Atmospheric Water Resources Management	215,755,892	119,651,695	6,369,965	4,800,000	84,934,232
Program Related Engineering and Scientific Studies	155,823,000	65,061,535	7,535,002	4,870,000	78,356,463
TOTAL SCHEDULED PROGRAM - GENERAL INVESTIGATIONS (Reclamation Costs). . .			$39,685,754	$28,999,000	
Distributive charges for services facilities, unliquidated obligations, etc.			-3,839,065	-0-	
General reduction due to slippage, savings, and carryover balance (underfinancing).			-1,175,000	-1,179,000	
Total program			$34,671,689	$27,820,000	
Prior Year Funds Available			-636,689	-0-	
Total Appropriation (allotment of new funds).			$34,035,000 1/	$27,820,000	

1/ This amount has not been reduced $1,464,000 for Public Law 99-177.

Appropriation Title: General Investigations
Advance Planning

SUMMARY OF ADVANCE PLANNING PROGRAM

Project	FY 1986	FY 1987
All American Canal Relocation, California	$ 300,000	$ 630,000
Big Sandy River Unit, CRWQIP, Wyoming	75,000	---
CENDAK (Central South Dakota Water Studies),	1,775,000	200,000
Colorado Coastal Plains Project, Texas	602,126	---
Dirty Devil River Unit, CRWQIP, Utah	---	165,000
Lake Andes - Wagner Unit, South Dakota	38,260	---
Lower Colorado Water Supply Project, California	200,000	---
Lower Gunnison Basin Unit, CRWQIP, Colorado	275,328	100,000
Minidoka Project, North Side Pumping Division Extension	225,000	160,000
Umatilla Basin Project, Oregon	---	134,000
Yakima River Basin Water Enhancement Project, Washington	---	100,000
1/ 2/	$3,490,714	$1,489,000

1/ Does not include underfinancing

2/ Federal funds only

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Alamogordo Municipal and Industrial Water Supply Study		State New Mexico
Initiation 10/1/85	Completion 9/30/88	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 709,965	$ 159,965	$ 200,000	$ 150,000	$ 200,000
Non-Federal:	0	0	0	0	0
Other Federal:					
TOTAL	$ 709,965	$ 159,965	$ 200,000	$ 150,000	$ 200,000

Description of Study

The city of Alamogordo located in Otero County in south-central New Mexico, needs a dependable water supply. There are significant constraints on the availability of high quality water, as well as an inadequate raw water storage capability, treatment and distribution system. Distribution and treatment facilities are in immediate need of improvement and repair. The raw water collection system, which needs upgrading, could require new storage facilities. A number of alternative water solutions are being examined, including the La Luz-Fresnal Canyon Reservoir sites, the improvement of the La Luz-Fresnal collection systems, new high quality ground water wells, selected city water system improvements, and conservation. The Alamogordo area faces chronic water shortages or deteriorating water quality in future years unless a water supply enhancement strategy is developed and carried out.

Alamogordo has indicated its willingness to assist Reclamation by providing engineering staff capability in obtaining and preparing information; however, the value and timing of such efforts has yet to be determined.

The total estimated cost increased $9,965 due to actual contract costs.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project All-American Canal Relocation		State California
Initiation FY 1984	Completion FY 1986	Percentage Cost Sharing —	Type of Study Project Investigation

SUMMARIZED FINANCIAL DATA

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 425,000	$ 397,991	$ 27,009	$ —	$ —
Non-Federal:	—	—	—	—	—
Other Federal:	—	—	—	—	—
TOTAL	$ 425,000	$ 397,991	$ 27,009	$ —	$ —

DESCRIPTION OF STUDY

This project is located on the All-American Canal west of Yuma, Arizona, beginning south of Pilot Knob and extending west to Drop No. 4.

The purposes of the study are to investigate relocating and lining approximately 30 miles of the All-American Canal to conserve seepage and to identify use of the salvaged water. The unlined canal was constructed in the 1940's to convey water from the Colorado River to the Imperial and Coachella Valleys in California. Since the Imperial Irrigation District and Coachella Valley Water District irrigate year round, the canal cannot be shut down for any length of time. The prime plan under consideration is to build a new concrete-lined canal next to the present alinement between a location south of Pilot Knob and Drop No. 4. Tie-in to the existing canal at drop structures and highway crossings would permit the use of these facilities in the new canal.

Delay of one year in the study completion is due to a reassessment and reanalysis of alternatives.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Bedias Project		State Texas
Initiation 10/1/83	Completion 9/30/88	Percentage Cost Sharing 6.3	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	5,388,286	462,901	580,385	1,600,000	2,745,000
Non-Federal:	350,000	115,000	60,000	100,000	75,000
Other Federal:					
TOTAL	5,738,286	577,901	640,385	1,700,000	2,820,000

Description of Study

The Bedias Project area is located on Bedias Creek in the lower Trinity River Basin, Texas.

A significant demand on the lower Trinity River Basin water resource is the increasing dependence on surface water by the Houston-Galveston area. Existing surface and ground water supplies for the coastal area can meet only a portion of projected demands. Ground water is being over-used which is causing severe problems with subsidence. The city of Houston estimates that present surface water supplies will be in full use by about 1995. Development of potential surface water sources in the lower Trinity River Basin appears needed to help meet growing water needs of the lower basin and adjoining coastal basins, and to relieve the demands presently placed on ground water so that the rate of subsidence can be decreased and possibly halted. The proposed Bedias reservoir is identified in the Trinity River Authority Master Plan for Basin-wide Development as having the capability to develop about 95-100 million gallons of water per day.

The Trinity River Authority and the Texas Water Development Board support the study of the Bedias site, a proposed reservoir in the Texas State Water Plan. The State of Texas and the Trinity River Authority are participating in the study efforts by providing in-kind services.

Bedias Project (cont.)

The total estimated cost has increased $980,951 due to estimated contracting costs for completion of the study. The primary factors in the increase are the direct labor overhead, general and administrative expense and fees necessary for the contracted work. The investigation is scheduled for completion in fiscal year 1988. The one year extension is due to lengthy negotiations, evaluations and financial audits of firms.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Blue Holes Reservoir		State Wyoming
Initiation FY 1984	Completion FY 1986	Percentage Cost Sharing 65	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 273,290	$ 123,290	$ 150,000	$ --	$ --
Non-Federal:	500,000	500,000	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$ 773 290	$ 623,290	$ 150,000	$ --	$ --

Description of Study

This study would assess the viability of building a storage-reservoir on the Wind River near Riverton. The proposed reservoir would be a multipurpose project with water for new and supplemental irrigation, hydropower, municipal and industrial supply, recreation, and fish and wildlife.

In September 1981, an appraisal-level study titled "Wind River Basin Supply Study" was completed. Blue Holes is an alternative that the State of Wyoming and the local residents are supporting for development. The State of Wyoming appropriated $500,000 for studies of water development projects and problems in the Wind River Basin. The State started their studies in FY 1983 and Federal involvement began in FY 1984.

Municipal and industrial and irrigation water users have identified a need for a new water supply of 190,000 acre-feet. Compounding this need is the concern by the Wind River Reservation Indian Tribes to maintain their reserved water and to maintain their fishery in the Wind River. Blue Holes Reservoir would provide for the needs and concerns of all interested parties in the Wind River Basin.

Negotiations between the State of Wyoming and the Wind River Indian Tribes on the adjudication of the water rights in the Wind River Basin is causing a delay in the continuation of the study.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Missouri Basin	PROJECT CENDAK (Central South Dakota Water Supply System)		STATE South Dakota
INITIATION FY 1982	COMPLETION FY 1986	PERCENTAGE COST SHARING 20	TYPE OF STUDY Project Investigation

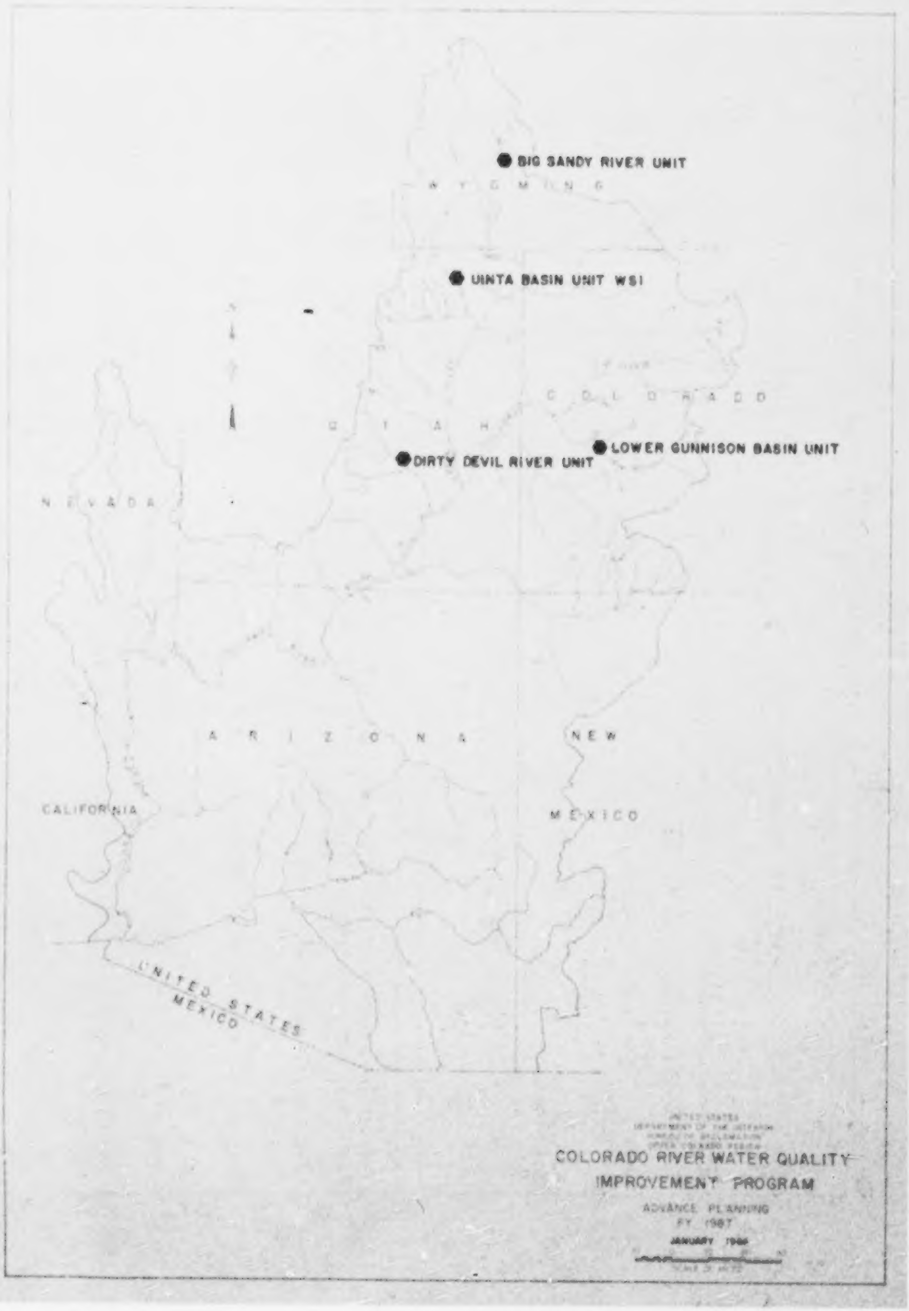
Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$2,784,757	$ 2,660,141	$ 124,616	$ —	$ —
Non-Federal:	630,000	630,000	-	—	—
Other Federal:					
Total	$3,414,757	$ 3,290,141	$ 124,616	$ —	$ —

Description of Study

The purpose of this study is to investigate the potential of transporting and developing water from the Missouri River for use in central South Dakota. Primary emphasis is being focused on irrigation development. In addition, other multipurpose aspects such as municipal and industrial water, fish and wildlife, are being considered. The Federal preferred plan would irrigate 300,000 acres, and the project sponsors and the State of South Dakota preferred plan would irrigate up to 474,000 acres.

The study has been included in the South Dakota State Water Plan by the South Dakota legislature. The Department of Water and Natural Resources has ranked the study among the top five in priority. The investigation is being jointly done by CENDAK, the State of South Dakota, and the Bureau of Reclamation with all three entities sharing in the cost.


BIG SANDY RIVER UNIT
WYOMING
UINTA BASIN UNIT WSI
COLORADO
UTAH
LOWER GUNNISON BASIN UNIT
DIRTY DEVIL RIVER UNIT
NEVADA
ARIZONA
NEW MEXICO
CALIFORNIA
UNITED STATES
MEXICO
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
COLORADO RIVER WATER QUALITY
IMPROVEMENT PROGRAM
ADVANCE PLANNING
FY 1987
JANUARY 1986
SCALE OF MILES

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project Central Valley Fish and Wildlife Management Study		State California
Initiation FY 1979	Completion FY 1986	Percentage Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$2,733,649	$2,222,319	$ 511,330	$ --	$ --
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$2,733,649	$2,222,319	$ 511,330	$ --	$ --

Description of Study

The study area encompasses 18 counties and portions of 18 others, all in the Central Valley Basin, but will not embrace the Sacramento-San Joaquin Delta and the San Francisco Bay complex.

The study will compare baseline information and fish and wildlife problems and enhancement opportunities with other Central Valley Project purposes. The end product will be a comprehensive fish and wildlife plan for the Central Valley that coordinates the management of fish and wildlife resources with other water-related uses.

Evaluations of fishery problems have been completed at Red Bluff Diversion Dam, Tehama-Colusa Canal Fish Facilities, Anderson-Cottonwood Irrigation District Diversion Dam and of predation of anadromous fish in the Sacramento River. Study findings have led to action programs to implement solutions at these facilities. Measures to restore or enhance wildlife habitats on irrigated farm lands have been identified. Another study collected the data needed to identify methods to provide firm water supplies to Central Valley wildfowl refuges. As a spinoff of this study, a new investigation was initiated in fiscal year 1986 to refine alternative solutions to the refuge water supply problem. Potential solutions to the heavy metal toxicity problem causing anadromous fishkills in the Sacramento River have been identified. This study is leading to a fiscal year 1987 preconstruction new start and an Interagency Agreement with the Environmental Protection Agency (EPA) to implement solutions to the toxicity problem. Another study identified solutions to fishery management problems at major Central Valley reservoirs.

Central Valley Fish and Wildlife Management (cont.)

Fiscal Year 1986 efforts will be concentrated on completing reports evaluating river flow and spawning habitat needs for salmon in the Sacramento River; operations on Coleman National Fish Hatchery and Keswick fish trap; the effect of unscreened diversions on fish in the Sacramento River; the potential of improving salmon population levels in the San Joaquin River system; enlargement of Nimbus Fish Hatchery; means to improve wildlife habitat on water project lands; possibilities for land acquistion as a solution to seepage, riparian vegetation, and fishing access problems along the Sacramento River; development of programs to restore and preserve riparian ecosystems in the Central Valley; means to improve the anadromous fishery in Clear Creek; and alternative solutions to temperature and turbidity problems in the Sacramento River. Major efforts will be focused on developing a comprehensive, long-range fish and wildlife management program for the Central Valley.

Ten investigations resulting in eight study reports have been completed of which five reports have been released to the public, and fourteen others are at various stages of completion. Three investigations were covered in one report.

The total estimated cost of the study decreased $95,874 as a result of rescoping requirements on several remaining studies.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATION PROGRAM

Region Missouri Basin	Project Colorado-Big Thompson Powerplant		State Colorado
Initiation FY1985	Completion FY1986	Percentage Cost Sharing 0	Type of Study Special Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 49,476	$ 9,476	$ 40,000	--	--
Non-Federal:	-	-	-	--	--
Other Federal:	-	-	-	-	
TOTAL	$ 49,476	$ 9,476	$ 40,000	--	--

DESCRIPTION OF STUDY

The Western Energy Expansion Study was conducted by Reclamation in 1976 and 1977. It recommended further evaluation of pumped-storage facilities in many locations, and led to the special investigation Potential Power Additions to the Colorado-Big Thompson project, Pick-Sloan Missouri Basin Program, completed in April 1978. This special report identified the pumped-storage potential as well as three low-head power potentials. The low-head plants will not be considered during this investigation.

This study has been discontinued due to lack of sponsors.

PF-44

Bureau of Reclamation CRWQIP (Summary)

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION UC, LC & ERC	PROJECT (CRWQIP) Colorado River Water Quality Improvement Program		STATE Various
INITIATION FY 1972	COMPLETION Ongoing	PERCENTAGE COST SHARING 0.9	TYPE OF STUDY Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$58,118,000	$ 39,591,296	$5,469,003	$3,620,000	$ 9,437,701
Non-Federal:	330,000	165,000	155,000	5,000	5,000
Other Federal:	258,000	258,000	0	0	0
Total	$58,706,000	$ 40,014,296	$5,624,003	$3,625,000	$ 9,442,701

Description of Study

The Colorado River Water Qualtiy Improvement Program is located in the Colorado River Basin in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The purpose of this investigation is to develop the most comprehensive and cost-effective program for salinity control in the Colorado River Basin. Salinity standards, including numeric criteria for the lower mainstem, were established in 1975 and reviewed in 1978, 1981, and 1984. Additional development of the basin's water resources will generate increases in the salinity levels and consequent violations of the standards unless salinity control measures are implemented. Natural sources contribute the largest share. Municipal and industrial uses also make significant contributions. The salt load is concentrated into smaller volumes of water by out-of-basin exports, evapotranspiration by irrigated crops, and evaporation from free-water surfaces, further increasing salinity concentrations.

The program is identifying individual problem areas, developing alternative control plans, and recommending remedial action. In addition to the physical control units, several support studies are underway including development of simulation models. Research activities include investigation of the relationship between irrigation efficiency and salt loading, land and channel processes contributing to the salt load from diffuse sources, evaporation pond cost reduction, the phenomenon of salt precipitation in reservoirs, and deslating pretreatment and water characterization studies.

Colorado River Water Quality Improvement Program (continued)

The total estimated cost of the Colorado River Water Quality Improvement Program plan formulation investigations was decreased by $1,300,000, primarily as a result of transferring McElmo Creek plan formulation funds to the Dolores Project in accordance with the provisions of P.L. 98-569.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Big Sandy River Unit		State Wyoming
Initiation FY 1972	Completion FY 1987	Percentage of Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$4,502,246	$3,702,246	$500,000	$300,000	---
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$4,502,246	$3,702,246	$500,000	$300,000	---

Description of Study

The Big Sandy River Unit is located in Sweetwater County in southwestern Wyoming, in the vicinity of Rock Springs. The Big Sandy River Unit contributes an estimated 164,000 tons of salts per year from point and diffuse sources. The study seeks the most cost-effective method to reduce salinity in the Big Sandy River, a tributary to the Green River which in turn enters the Colorado River. The study has concentrated on solutions which would be compatible with the existing irrigation project located above the springs and seeps and which would use captured saline water beneficially. One of the major requirements during the study was to determine the source of water and the quality and quantity of pollutants. This required the drilling and pumping of test wells in an area near the river.

Plan formulation investigations to date have developed a preferred plan to provide saline water to industrial users, but it is no longer viable since industrial development plans have significantly altered.

Current efforts are being directed to developing additional alternative solutions at Wyoming's request. Technical work has been reduced to a level needed to support plan formulation. Reclamation is now studying reducing ground water recharge through selective lining of canals and laterals.

PF-44
Bureau of Reclamation

CRWQIP (continued)

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Dirty Devil River Unit		State Utah
Initiation FY 1973	Completion FY 1987	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$3,192,394	$2,492,394	$500,000	$200,000	---
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$3,192,394	$2,492,394	$500,000	$200,000	---

Description of Study

The Dirty Devil River Unit is located in south-central Utah and encompasses the Dirty Devil River drainage basin. The Dirty Devil River's major tributaries are the Fremont River and Muddy Creek. The Dirty Devil River contributes approximately 140,000 tons of salt per year to the Colorado River system through flows of approximately 70,000 acre-feet per year. Of this total, approximately 65 percent of the salt loading and 33 percent of the flow comes from Muddy Creek, as measured at its confluence with the Fremont River. Soils and geologic formation derived from a marine environment are the main salt sources. Irrigation return flows and surface runoff from these soils, as well as ground water flow through saline geologic formations, transport the salt. Approximately 7,200 acres of salt-bearing irrigated land have been identified in the basin, and approximately 20,000 tons per year of salt enter the system from this land, including that from surface runoff. Canal and general system improvements could be made to reduce this salt contribution. Several saline springs have been identified containing mostly sodium chloride with concentrations ranging from 7,000 to 30,000 mg/L Total Dissolved Solids (TDS). It is estimated that 15,000 to 30,000 tons per year of salt enter the system from these springs. Potential control measures includes collection and disposal, industrial use or, other methods. Since the remaining salt enters the system from surface runoff, with lower concentrations of salt, little control potential exists to remove it.

Salinity control potential does exist through improvements to the existing irrigation system by reducing canal seepage. Projected future conditions show improvements may evolve through private development, and Reclamation will recommend no action awaiting this development. Industrial use of the water could be developed in the future, but no users can be firmly identified at this time. The saline spring water could also be collected with one of several types of ground water collection systems and disposed of in isolated geologic formations through deep-well injection. At present, the deep-well injection method is the preferred plan.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Lower Gunnison Basin Unit		State Colorado
Initiation FY 1973	Completion FY 1988	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$5,848,149	$4,038,149	$810,000	$700,000	$300,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$5,848,149	$4,038,149	$810,000	$700,000	$300,000

Description of Study

The Lower Gunnison Basin Unit is located in west-central Colorado in Delta and Gunnison Counties along the Gunnison River and the North Fork of the Gunnison River. The Lower Gunnison North Fork area salt loading problem is derived primarily from irrigation leaching. The Soil Conservation Service has completed its salinity control study for on-farm sources from this area and has estimated that about 200,000 tons of salts enter the Colorado River system from off-farm canal and lateral related sources. In addition, some saline springs are also known to exist in the area. There are numerous irrigation channels within the area, and much of the soil consists of or is underlain by Mancos shale or shale derived soil. Mancos shale is a mineralized marine formation heavy in gypsum salts. Irrigation water traversing the unlined delivery system seeps through the soil, contacts the Mancos soils and/or rock, dissolves the minerals, and exits into a drain and the river. A conventional solution to this kind of salinity problem has been lining of the delivery system with an impermeable lining such as concrete, plastic, or compacted earth. These solutions will be examined along with less conventional concepts. The purpose of the study will be to delineate the salt loading areas, develop a salt loading mechanism model, formulate alternative solutions to the problem, and select one or more preferred courses of action.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region LC	Project Colorado River Water Quality Improvement Program Lower Virgin River		State Nevada-Arizona
Initiation FY 1972	Completion FY 1989	Percentage of Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,064,166	$464,166	$300,000	$200,000	$100,000
Non-Federal:	0	0	0	0	0
Other Federal:	0	0	0	0	0
TOTAL	$1,064,166	$464,166	$300,000	$200,000	$100,000

Description of Study

The Lower Virgin River Unit includes the former Littlefield Springs Unit and the entire Lower Virgin River from just above Littlefield Springs to Lake Mead. The feasibility study of this point source unit did not identify a source of saline water whose treatment or removal from the river system would be cost effective. A concluding report on this phase of Reclamation's investigation was issued in March 1982.

Further studies have been programmed to investigate the viability of capturing Lower Virgin River saline underflows and surface flows and diverting them for industrial use as powerplant cooling water or for other uses. Both the State of Nevada and the Nevada Power Company have expressed interest in the project. Previous studies were conducted further upstream. In fiscal year 1985 investigations for the potential alternatives for capture, conveyance, and uses for the saline water were initiated. Fiscal year 1986 activities will include drilling test wells and performing aquifer tests to provide water samples, ground-water elevations, and hydrology data. In fiscal year 1987, field data will be analyzed for preparation of the plan formulation working document and the advance planning plan of study.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION UC & LC	PROJECT Colorado River Water Quality Improvement Program Other Project Investigations		STATE Various
INITIATION FY 1972	COMPLETION Ongoing	PERCENTAGE COST SHARING -0-	TYPE OF STUDY Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$14,163,356	$ 11,037,833	$ 194,000	$ 90,000	$ 2,841,523
Non-Federal:	0	0	0	0	0
Other Federal:	0	0	0	0	0
Total	$14,163,356	$ 11,037,833	$ 194,000	$ 90,000	$ 2,841,523

Description of Study

Studies completed to date include work in the Upper Colorado Region and Lower Colorado Region associated with the Irrigation Management Services, Support Studies, Utilizing Return Flow Division, Point Source Division, and Irrigation Source Division. Continuing activities include funding for studies anticipated to address new technology and unidentified cost-effective salt load reduction opportunities.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region LC	Project Colorado River Water Quality Improvement Program Palo Verde Irrigation District Unit		State California
Initiation FY 1973	Completion FY 1988	Percentage of Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,422,662	$858,662	$114,000	$200,000	$250,000
Non-Federal:	55,000	40,000	5,000	5,000	5,000
Other Federal:	0	0	0	0	0
TOTAL	$1,477,662	$898,662	$119,000	$205,000	$255,000

Description of Study

The District is a privately developed irrigation project comprising 92,000 acres of irrigated land which extends about 30 miles along the Colorado River. A preliminary analysis indicates that return flows from the District contribute approximately 152,000 tons of salt annually to the Colorado River system.

Fiscal year 1987 activities will complete Phase I work in developing hydro-salinity analysis for the Palo Verde Irrigation District. The study will provide information for Reclamation, SCS, and the Palo Verdo Irrigation District to determine salinity control program components and the need for further studies. If Phase I work dictates further study, plan formulation activities will be initiated in fiscal year 1987.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Price-San Rafael Rivers Unit	State Utah

Initiation FY 1972	Completion FY 1988	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$4,140,054	$3,530,054	$310,000	$200,000	$ 100,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$4,140,054	$3,530,054	$310,000	$200,000	$ 100,000

Description of Study

The Price-San Rafael Rivers Unit is located in east-central Utah within Carbon and Emery Counties. It includes the drainage areas of the Price and San Rafael River Basins of approximately 3,600 square miles. An estimated 430,000 tons of salt annually reach the Colorado River from these two river basins.

Studies on the Price and San Rafael River Basins have identified sources and causes of salt contribution to the Colorado River System. In addition, alternative plans were evaluated, and a preferred plan for reducing salt loading has been selected. The preferred plan consists of lining stock watering ponds to improve winter watering practices. Approximately 156 stockwater ponds in the Price River Basin and approximately 59 stockwater ponds in the San Rafael River Basin will be lined. Advance planning is required to refine the preferred plan and prepare specification designs.

The preferred plan will result in a salinity reduction of 2.0 mg/L at Imperial Dam. Of this, 1 mg/L would be attributed to the Price River and 0.9 mg/L to the San Rafael River. Total salt loading to the Colorado River would be reduced by about 21,800 tons per year.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION E&RC	PROJECT Colorado River Water Quality Improvement Program Colorado River Water Quality Office Program Coordination and Support		STATE Various
INITIATION FY 1972	COMPLETION Ongoing	PERCENTAGE COST SHARING -0-	TYPE OF STUDY Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$10,271,247	$ 6,814,391	$1,105,738	$ 400,000	$ 1,951,118
Non-Federal:	0	0	0	0	0
Other Federal:	0	0	0	0	0
Total	$10,271,247	$ 6,814,391	$1,105,738	$ 400,000	$ 1,951,118

Description of Study

The Colorado River Water Quality Office coordinates and monitors the overall basinwide program with the Upper and Lower Colorado Regions and other Federal agencies in consultation with the Colorado River Basin Salinity Control Forum and the Colorado River Basin Salinity Control Advisory Council to meet the salt load reduction schedule that the numeric criteria requires. These continuing activities entail coordination of technical, policy, and legislative initiatives, Colorado River Simulation System estimates for salt load reduction criteria, development or ranking criteria for potential projects based on cost effectiveness evalutation, consolidation of basinwide plan formulation, advance planning, preconstruction, and construction programs and budget, and research and verification activities to meet program goals.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Saline Water Use and Disposal Opportunities Unit		State Various
Initiation FY 1982	Completion FY 1988	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,276,271	$1,236,271	$ 20,000	$ 10,000	$ 10,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$1,276,271	$1,236,271	$ 20,000	$ 10,000	$ 10,000

Description of Study

The Saline Water Use and Disposal Opportunities Unit is located in the Colorado River Basin in portions of Wyoming, Colorado, Utah, Nevada, and California. The unit provides detailed study and analysis of specific implementation opportunities for use and disposal of saline water. Prospective solutions being studied are: (1) a coal transport pipeline named Western Resource Transport and (2) various saline water projects. Western Resource Transport is an approximately 1,180-mile-long liquid carbon dioxide/coal transport pipeline that will link the Wyoming Powder River Basin coalfields with the port of Long Beach. The saline water projects are proposals for transporting saline water by pipeline to points of beneficial industrial use in the Colorado River Basin. The transport pipeline and saline water projects are part of a combined effort between Government (represented by the Bureau of Reclamation) and private industry (represented by Western Resource Transport, Inc.). In addition to providing a least-cost method for salinity control, the project would afford an economically competitive means for coal transport to domestic and export markets. An innovative technology using liquid carbon dioxide as the transport medium for coal is proposed for use, thus avoiding problems associated with traditional water-based slurries. An added advantage of using CO_2 is that the CO_2 can be used for enhanced oil recovery in the Los Angeles Basin. Saline water from sources throughout the Colorado River Basin would be transported by pipeline to points of beneficial use such as to powerplants for cooling and for use in oil shale processing or solution mining. Potential powerplant uses exist for nearly 200,000 acre-feet of saline water. Government studies are presently being curtailed awaiting private industry developments.

PF-44 CRWQIP (continued)
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region E&RC	Project Colorado River Water Quality Improvement Program Saline Water Use & Disp[illegible]portunities Saline Water Use Cooli[illegible]erification Program		State Various
Initiation FY 1980	Completion FY 1992	Percentage of Cost Sharing 28.6	Type of Study Project Investigation

Summarized Financial Data

		Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:		$1,928,753	$342,157	$293,865	$300,000	$992,731
Non-Federal		275,000	125,000	150,000	0	0
Other Federal:	(EPA)	258,000	258,000	0	0	0
TOTAL		$2,461,753	$725,157	$443,865	$300,000	$992,731

Description of Study

An appraisal study was initiated in May 1980 to study the opportunities for collecting saline waters in the Colorado River Basin for use in the energy industry. The study developed alternatives to conventional structural control methods involving lined evaporation ponds and desalination projects, which are described in the September 1981 special report.

About 610,000 acre-feet of saline water per year could be collected for disposal or for use in energy development -- for cooling coal-fired powerplants and for industrial processes. Of special concern in the study are legal and institutional, environmental, and cost-sharing issues. The objectives of the program are to verify that off-the-shelf hardware can be used for saline water cooling, to establish the incremental costs of available technology as compared to using fresh water, and to provide sufficient information to industry to allow them to evaluate saline water as an alternative water supply.

A Letter of Agreement for cost-sharing the Etiwanda Powerplant Verification Program, equipment design, and an operational plan for installation and operation of the verification unit are expected to be completed in fiscal year 1985, with installation of the verification facilities scheduled for initiation in fiscal year 1986.

Colorado River Water Quality Improvement Program Saline Water Use & Disposal Opportunities - Saline Water Cooling System Verification Program (continued)

The Etiwanda Powerplant Verification study is a field investigation program to verify the technical and economic viability of selected hardware and processes to use saline water in powerplant cooling. Cost-sharing for the program is provided by Reclamation, EPA, State of California, Sephton Water Technology, Pacific Gas & Electric, and Southern California Edison. The $533,000 cost-sharing funds noted above are for this study. Cost-sharing for this study is 47 percent non-Federal, 9 percent Reclamation, and EPA provides the balance of the funds.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program San Juan River Unit		State AR-CO-NM-UT
Initiation FY 1986	Completion FY 1989	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,328,314	$ 28,314	$400,000	$400,000	$500,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$1,328,314	$ 28,314	$400,000	$400,000	$500,000

Description of Study

The San Juan River Unit is located in the San Juan River Basin, and flows from the river's headwaters in south-central Colorado, through northwestern New Mexico, to its mouth at Lake Powell in southeastern Utah. Potentially the San Juan River Unit could further the objectives of removing salt from the Colorado River system. Preliminary reconnaissance of the San Juan River between Shiprock, New Mexico, and the Four Corners area indicates significant salt contributions. Data show an average annual flow of 1,821,000 acre-feet at Bluff, Utah, carries a salt load of 1,037,000 tons. One-half of this salt load, 510,000 tons, enters the river between Farmington, New Mexico, and Bluff, Utah, with an increase in flow of only 15 percent or 234,000 acre-feet. Of this, 171,000 tons annually enter the 27-mile reach between Shiprock and the Four Corners, while the difference in flow is only 95,000 acre-feet annually.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region LC	Project Colorado River Water Quality Improvement Program Support Division		State Arizona, Nevada California
Initiation FY 1972	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$3,432,290	$2,298,561	$221,400	$85,000	$827,329
Non-Federal:	0	0	0	0	0
Other Federal:	0	0	0	0	0
TOTAL	$3,432,290	$2,298,561	$221,400	$85,000	$827,329

Description of Study

Support studies in the Lower Colorado Region included high recovery pretreatment desalting field studies. Continuing work includes the Colorado River model and data base, evaporation test ponds monitoring and data collection, and salinity problem identification. Research and verification activities and contracts on reservoir salt precipitation and evaporation and analysis of water chemistry data to isolate changes in basin salt loading were completed in fiscal year 1984. Research and verification activities in fiscal year 1986 and 1987 include continuing water characterization studies and work on saline water cooling system technology.

Support studies will also include a portion of the reservoir monitoring program (RMP) initiated in FY 1986 to evaluate hydrologic and environmental impacts, verify the LARM (laterally averaged reservoir model) computer model, and continue the current monitoring that provides operational and background data.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Colorado River Water Quality Improvement Program Uinta Basin Unit		State Utah
Initiation FY 1973	Completion FY 1991	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$5,548,098	$2,748,098	$700,000	$635,000	$1,465,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$5,548,098	$2,748,098	$700,000	$635,000	$1,465,000

Description of Study

The Uinta Basin Unit is located in northeastern Utah in Duchesne and Uinta Counties. The unit area includes lands in Ashley Valley, Pleasant Valley, and along lower reaches of the Duchesne, Lake Fork, and Uinta Rivers.

In the Uinta Basin salt loading occurs as a result of weathering and the dissolution of soluble salts in soil and substrata. In addition, salt concentration occurs due to agricultural or industrial consumptive use. The application of irrigation water results in increased salt concentrations because of both salt loading and salt concentration.

The preferred plan is to line canals and laterals in the Unita Basin area. This would further achieve the objectives of reducing salinity in the Colorado River. Local benefits would be water conservation, an improved irrigation system, and improved irrigation water quality for residents in the Uinta Basin Unit area.

Irrigation return flows within the Uinta Basin contribute about 240,000 tons of salt annually to the Colorado River which results in an increase of 24 mg/L at Imperial Dam. The remaining phase of the study will address the Indian and non-Indian irrigation distribution systems not considered in the first portion, including Ashley Valley and the potential for the collection and industrial use of saline water.

Colorado River Water Quality Improvement - Unita Basin Unit (continued)

A Memorandum of Agreement between the Bureau of Reclamation and the Soil Conservation Service, which provides for the necessary cooperation and coordination between these agencies and the Agricultural Research Service, was signed by the Bureau of Reclamtion on November 29, 1974, and the Soil Conservation Service on December 6, 1974. The Agricultural Stabilization and Conservation Service in cooperation with the SCS has begun construction on a 10-year, $20 million salinity control program for on-farm irrigation improvements in the Uinta Basin. The Bureau of Reclamation needs to start construction of the delivery system as planned in order to coordinate off-farm and on-farm activities.

PF-44

Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project Cross Delta Investigation		State California
Initiation FY 1986	Completion FY 1986	Percentage of Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 250,000	$ —	$ 250,000	$ —	$ —
Non-Federal:	250,000	—	250,000	—	$ —
Other Federal:	—	—	—	—	$ —
TOTAL	$ 500,000	$ —	$ 500,000	$ —	$ —

Description of Study

The study area includes the Sacramento-San Joaquin Delta area. The purpose of the investigation is to formulate a plan acceptable to the public, which would deliver needed additional quantities of Sacramento River water to the export pumps located on the southside of the Delta while maintaining the beneficial Delta water use and the Delta environment. The Bureau and the State of California through their respective Central Valley Project and State Water Project, are planning to divert up to 7.7 million acre-feet of water annually by year 2000 for agricultural and M&I purposes from the Sacramento River to the southwestern part of the Delta. The current diversion rate is about 5.5 million acre-feet annually which impacts the levee systems and environment. The increase in diversions needed to meet demands south of the Delta may have a significant affect on the Delta environment if new facilities through the Delta are not constructed.

Cross Delta Constriction (continued)

The Sacramento-San Joaquin Delta contains 37,000 acres of water surface and over 1,000 miles of shoreline and offers great opportunities for a wide range of recreation and fishery activities. The Delta provides vital nursery areas for striped bass, salmon, and American shad which migrate to the Delta from the ocean, as well as year-round habitat for warm-water game fish.

The California State Department of Water Resources will meet 50 percent of the costs of the study providing in-kind services.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project Deep Carbonate Aquifer Project		State Nevada
Initiation FY 1985	Completion September 1990	Percentage Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 2,989,000	$ 299,813	$ 775,000	$ 764,000	$ 1,150,187
Non-Federal:	2,989,000	-	405,000	864,000	1,720,000
Other Federal:	-	-	-	-	-
TOTAL	$ 5,978,000	$ 299,813	$1,180,000	$1,628,000	$ 2,870,187

Description of Study

The project study area is in portions of Clark and Lincoln Counties in southern Nevada. The investigation is the outcome of a September 1984 Special Report and consists of studies to recommend a preferred plan to provide for additional water system peaking capacity and resolve water supply problems and needs of southern Nevada.

The capacity of the existing water supply system for the southern Nevada area will be inadequate to provide for peak daily demands by the year 2005 and could be inadequate as early as 1995 if the load management program of Nevada Power company forces water supplies to be pumped during off-peak hours, or if productivity from existing alluvial wells is reduced. An additional water supply will be required by the year 2026.

Among the resources and new facilities identified in the special report were: expanding or modifying existing systems; new alluvial wells; new deep carbonate wells; ground water from surrounding areas; or implementing water conservation measures. Implementation of water conservation and wastewater reuse programs, and full utilization of available local storage will not meet the project needs nor provide sufficient capacity for the southern Nevada area. After implementing these measures, there will still be a 150 cfs deficiency in peaking capacity.

Deep Carbonate Aquifer Project (continued)

Local water users have focused significant effort on assessing the development potential of the carbonate aquifer for meeting future water needs. Available information indicates that the carbonate aquifer has the required potential but many uncertainties exist and other alternatives need to be examined.

The Nevada State Legislature has set aside $600,000 in fiscal year 1986 and $600,000 in fiscal year 1987 for Reclamation's effort and other related activities. From this fund Reclamation is scheduled to receive $405,000 in cash and $370,000 of in-kind services during FY 1986.

Increase of $3,466,000 and expansion of the study by one year is due to the need for additional drilling and testing of three exploratory wells to cover the vast area being studied under the deep carbonate aquifer alternative.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project Delta Support Studies		State California
Initiation FY 1986	Completion FY 1990	Percentage Cost Sharing 85	Type of Study Special Investigations

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 2,934,000	$ --	$ 322,000	$ 283,000	$ 2,329,000
Non-Federal:	15,301,000	--	3,093,000	3,052,000	9,156,000
Other Federal:	1,370,000	--	290,000	270,000	810,000
TOTAL	$ 19,605,000	$ --	$3,705,000	$ 3,605,000	$12,295,000

Description of Study

The study area includes portions of Alameda, Contra Costa, Solano, Yolo, Sacramento, San Joaquin, San Francisco, San Mateo, Marin, Sonoma, Stanislaus, and Merced Counties. The Sacramento-San Joaquin Delta, Suisun Bay, San Pablo Bay, San Francisco Bay, Suisun Marsh, and the main tributary streams are all included in the study area.

Studies will provide factual data and criteria to support design and operation of the projects affecting the estuary. The study area includes waterways utilized extensively by warm water and anadromous fish and waterfowl. All of the salmon and striped bass in the Central Valley fishery must pass through the Delta to spawn. The area includes 736,000 acres of which 551,000 acres are primarily used for agriculutral production. The Federal Central Valley Project and the State Water Project use the Delta waterways for conveying riverflows and storage releases from reservoirs in the north to service areas south of the Delta. On July 13, 1970, the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, California State Departments of Water Resources and Fish and Game entered into an agreement providing for studies necessary to evaluate ecological effects of water development on the Sacramento-San Joaquin Estuary. These studies will continue to define operation and maintenance procedures and fish preservation measures to be used in future water management plans.

Delta Support Studies (cont.)

The four major study areas include: Fishery-factors affecting striped bass survival, salmon spawning and migration; Water Quality - factors affecting primary and secondary biological productivity; Suisun Marsh (concluded in fiscal year 1982) - identification of marsh management practices including the study of potential use of treated waste water for Suisun Marsh Management to meet the needs of this important waterfowl and wildlife area; and San Francisco Bay/Delta Outflow Study - evaluation of factors that affect the aquatic environment.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION PN	PROJECT - Deschutes River Basin Water Salvage Project		STATE Oregon
INITIATION FY 1987	COMPLETION FY 1989	PERCENTAGE COST SHARING 50%	TYPE OF STUDY Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$290,000	$ -	$ -	$50,000	$240,000
Non-Federal:	290,000	-	-	50,000	240,000
Other Federal:					
Total	$580,000	$ -	$ -	$100,000	$480,000

Description of Study

The Deschutes River basin is located in central Oregon near the cities of Bend and Redmond.

The project investigation will identify and evaluate the potential for saving water by lining irrigation canals in areas of high water loss. The basin has need of additional water for municipal and industrial uses, supplemental irrigation service, and streamflow enhancement to meet minimum State standards. Saved water could help meet these needs. A specific irrigation system will be selected for detailed evaluation and impact analysis and could serve as a model for similar projects in the basin.

Non-Federal funds will be available to assist in study financing, and the project has potential for upfront non-Federal construction funding.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project East Central Oklahoma Water Supply Study		State Oklahoma
Initiation 10/1/84	Completion 9/30/86	Percentage Cost Sharing 6.8	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$536,541	$236,541	$300,000	---	---
Non-Federal:	30,000	10,000	20,000	---	---
Other Federal:					
TOTAL	$536,541	$246,541	$320,000	---	---

Description of Study

The study area is located in east-central Oklahoma in the counties of Coal, Hughes, Lincoln, Okfuskee, Pontotoc, Pottawatomie, and Seminole.

The study area suffers from chronic economic under-development. Water supplies do not meet primary and secondary drinking water standards. Preliminary investigations have identified 26 entities that require additional water supplies to meet current and projected water demands. Due to declining petroleum and natural gas reserves and additional energy requirements, replacement energy sources are required to support area economic development. There is a need to determine the most cost-effective and acceptable solution to solving water quality problems; evaluate potential for additional water supplies to meet current and projected water demands in the area; and determine exact amount and priority of need. Approximately 180,200 acres of land have been identified as having potential for irrigation development. Further investigation is needed to determine how this potential might be best utilized for optimal contribution to area economic development. Projected regional needs also justify study of hydropower potential. A determination of present and projected hydropower demands for replacement energy needs to be accomplished.

The Oklahoma Water Resources Board, Red Ark Development Authority, Central Oklahoma Economic Development District, East-Central Water Association, and the Oklahoma Rural Water Association all support this study.

East Central Oklahoma Water Supply Study (cont.)

The Central Oklahoma Economic Development District, Southern Oklahoma Development Association, Red Ark Development Authority, and the Oklahoma Water Resources Board plan to assist in the study. There is a good potential for construction cost-sharing from the State of Oklahoma's Water Development Fund.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Interregional	Project Environmental and Interagency Coordination Activities		State Various
Initiation Ongoing	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 8,141,737	$ --	$3,811,737	$4,330,000	$ --
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$ 8,141,737	$ --	$3,811,737	$4,330,000	$ --

Description of Study

The advent of the National Environmental Policy Act of 1969 and various administration initiatives concerning water resources planning standards has required increased work internally as well as coordination and technical studies by agencies that have primary responsibility for environmental and other matters. Work in this category, underway or anticipated, is composed of the following items: irrigation benefit studies for the Corps of Engineers; review and comment on other agency negotiations and public hearings; participation and preparation of information for various public groups; participation on State and Federal study items; short-term unanticipated technical studies required by a wide range of administrative and congressional entities; preliminary examination of local problems and needs; plans of study on proposed investigations; correspondence and direct public inquiries; accomplishments of cooperative programs with Geological Survey for collecting, analyzing, and publishing streamflow data; participation on energy coordination activities; the review of Public Law 566 projects for the Department of Agriculture; review of wild and scenic river proposals; assuring periodic in-house review of procedures for evaluating and formulating natural resource projects.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Flaming Gorge Unit - CRSP Power Peaking Capacity		State Utah
Initiation FY 1980	Completion FY 1987	Percentage Cost Sharing 0	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$876,331	$576,331	$ ---	$300,000	---
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$876,331	$576,331	$ ---	$300,000	---

Description of Study

The CRSP Power Peaking Capacity, Generation at Outlet - Flaming Gorge Unit is located in northeastern Utah at Flaming Gorge Dam on the Green River about 45 miles north of Vernal, Utah.

Studies conducted under the Power Peaking Investigations have shown that about 100 MW of Federally sponsored hydroelectric power peaking capacity will be needed by the year 1990 in the Wyoming and northern Utah portions of the Colorado River Storage Project market area.

The power facilities at the Flaming Gorge Powerplant are unable to provide the power estimated to be needed in the CRSP market area by 1990.

Forty MW of peaking power would be developed by adding a turbine generator to the twin outlet pipes near the left abutment. The existing space for machine shop and parking would probably be utilized, and thereby require relocation. Many of the transmission facilities and piping and corresponding valving are already in place, making modification relatively cost effective. Power so developed would be marketed through the Western Area Power Administration and carried over Western's transmission system. The 40 MW would be operated on an integrated basis through the CRSP system so as to secure a maximum overall efficiency and economy for both Federal and non-Federal entities while, to the extent possible, preserving or enhancing the environment and other natural resources of the area.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Southwest Region	PROJECT Gallup-Navajo Indian Water Supply Project		STATE New Mexico
INITIATION FY 1986	COMPLETION FY 1986	PERCENTAGE COST SHARING 0	TYPE OF STUDY Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$ 200,000	$ —	$ 200,000	$ —	$ —
Non-Federal:	—	—	—	—	—
Other Federal:	—	—	—	—	
Total	$ 200,000	$ —	$ 200,000	$ —	$ —

Description of Study

The project area is located in McKinley, San Juan, and Sandoval Counties in northwest New Mexico. Present water supply systems and available ground water resources within the eastern segment of the reservation and the city of Gallup are inadequate for meeting present and future needs. Problems include poor water quality limited quantities, excessive well depths, inadequate peaking capabilities, and decreasing yields. A dependable, long-term, good-quality water supply source and a delivery system are needed to meet present and future needs. Regulation and storage can be provided by Navajo Dam and Reservoir. Depending on the amount of water needed for a new pipeline plan, legal water availability could be questionable. Based on the 5.8 million acre-feet Upper Colorado River Basin limitation and other planned or operating projects, the long-term estimated total depletions, including the Gallup-Navajo Project, could cause New Mexico to exceed its 647,000 acre-feet limitation. The energy-oriented Four Corners area of New Mexico, Arizona, Utah, and Colorado is currently growing and future expansion on the Navajo Reservation and the city of Gallup will depend on an adequate water supply which would be provided by the project.

Neither the city of Gallup nor the Navajo Nation has indicated cost-sharing interest or cost-sharing capability. Cash contribution is probably unlikely. Contribution of in-kind services will be explored as soon as the study is initiated.

The city of Gallup, New Mexico, and the Navajo Nation support the study.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region E&RC & W.O.	Project General Planning Studies		State Various
Initiation Ongoing	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 3,048,893	$ 363,580	$ 435,313	$ 400,000	$1,850,000
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$ 3,048,893	$ 363,580	$ 435,313	$ 400,000	$1,850,000

Description of Study

The purpose of these studies is to develop improved technical procedures for evaluating and planning projects and to train field personnel in the application of the new procedures to the ongoing program. The program of study includes economic analyses of water development for long-term benefit projections, improvement of land classification techniques, and resolving sedimentation and hydrologic problems. These activities do not circumvent or duplicate the provisions of the Colorado River Basin Project Act.

The funds will be used for: (1) the review and development of planning program policies for the Office of the Commissioner; (2) the preparation, revision, and issuance of technical guidelines for conducting the technical phases of resources planning; and (3) the performance of special studies requested by other natural resource agencies.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region E&R Center	Project Groundwater Recharge Demonstration Program		State Various
Initiation FY 1986	Completion FY 1988	Percentage Cost Sharing 0%	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$500,000	---	$500,000	$ ---	---
Non-Federal:	---				
Other Federal:	---				
TOTAL	$500,000	---	$500,000	$ ---	---

Description of Study

The purpose of the groundwater recharge demonstration program is to study the potential for groundwater recharge in the 17 Western States and to demonstrate artificial recharge technologies under a variety of hydrogeologic conditions. This program, as outlined in P.L. 98-434, authorizes and directs the Secretary of the Interior to carryout a two-phased program: Phase I, the planning, development, and site selection phase; Phase II, the design construction, data-gathering, and evaluation phase. The legislation establishes a 2-year period for Phase I and a 5-year period for Phase II. The legislation authorized appropriations of $500,000 for Phase I, which will be completed in November 1987.

During Phase I, a minimum of 12 sites will be selected for demonstration in the 8 High Plains States (Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, Wyoming) and a minimum of 9 sites will be selected in the other 9 Reclamation Act States. The demonstration project sites will be located in areas having declining water tables, available surface water supply, and a high probability of physical, chemical, and economic feasibility for recharge.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Missouri Basin	High Mountain Aquifer Study		Colorado
Initiation	Completion	Percentage Cost Sharing	Type of Study
FY 1985	FY 1989	Approx. 50	Special Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 620,338	$ 15,523 1/	$ 166,815	$ 230,000	$ 208,000
Non-Federal:	563,000	25,000	100,000	230,000	208,000
TOTAL	$1,183,338	$ 40,523	$266,815	$ 460,000	$ 416,000

DESCRIPTION OF STUDY

The primary objective of this investigation will be to determine the viability of using the glacial aquifers in the high mountain valleys of Colorado as storage reservoirs. 2/ The glacial aquifers offer a unique opportunity to combine natural and artificial techniques for the development of low cost water storage. This resource has experienced little to no development, and has the potential to provide a limited water supply for M&I (municipal and industrial), irrigation, streamflow and maintenance of water quality enhancement, and other uses. This investigation will require 3-1/2 years and will focus primarily on testing the concept of utilizing the mountain aquifers as ground-water reservoirs.

The Bureau and the CORY Company, Inc., a private entity, signed a contract to cost share in this investigation. Other water organizations have also expressed an interest in participation in this study.

Several Colorado State officials have expressed interest in this proposed development as the source of a previously unused resource. Additional support is beginning to surface from some local entities. These aquifers may also be usable for replacement and/or compensatory storage for the movement of water from the West Slope to the East Slope.

The total estimated cost was increased $340,000 and the completion data extended to FY 1989 to allow for 3 years of data collection.

1/ Included in the fiscal year 1985 Supplemental Appropriations.
2/ These aquifers are scattered throughout the high mountain areas of the State of Colorado and, for the most part, the sites are in close proximity to the Continental Divide.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project Imperial Irrigation District Canal Lining and System Improvement		State California
Initiation FY 1985	Completion September 1988	Percentage Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 486,000	$ 63,522	$ 224,478	$ 72,000	$ 126,000
Non-Federal:	486,000	63,618	218,000	72,000	132,382
Other Federal:	-	-	-	-	-
TOTAL	$ 972,000	$ 127,140	$ 442,478	$ 144,000	$ 258,382

Description of Study

The project location is on the Imperial Irrigation District (IID) in Imperial County, California. Four methods of saving agricultural water through water conservation to be investigated during this study are: concrete lining of 340 miles of canals and laterals, construction of a 61-mile spill interceptor channel with a terminal reservoir, installing an automated system of turnout gates on the East Highline Canal to stabilize lateral flows, and building an 8,000 acre-foot regulating reservoir to provide storage for excess water orders, and other small regulating reservoirs. It is estimated that these measures could save about 215,000 acre-feet of water per year. Preliminary analysis shows that by lining 340 miles of presently unlined canals about 104,000 acre-feet of seepage loss can be prevented. Further evaluation of on-farm management will also be included.

Conserved water could be utilized in the Imperial Valley or elsewhere in southern California by agreement among the State's Colorado River allottees. Completion of the Central Arizona Project will result in reduced diversions by California water users including up to 500,000 acre-feet in some years by the Metropolitan Water District (MWD). New sources of water for California to supplement State Water Project water are estimated to cost up to $328 per acre-foot at the MWD distribution system.

Imperial Irrigation District Canal Lining and System Improvement (continued)

The IID has been active in water conservation activities, and supports further studies. Other interested agencies include the Metropolitan Water District, Colorado River Board of California, California Department of Water Resources Control Board, Coachella Valley Water District, California Department of Fish and Game, land owners along the Salton Sea, and the California Waterfowl Association. The cost sharing agreement between Reclamation and the Imperial Irrigation District was finalized in fiscal year 1985. The IID has provided funds to Reclamation and has purchased and installed water recorders, initiated data collection and other tasks equal to Federal costs in fiscal year 1985.

Increase in total cost of $186,000 and addition of one year is due to a more realistic scoping of the project resulting in the need for designs of additional regulating reservoirs.

PF-44

Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Interregional	Project Investigation of Existing Projects		State Various
Initiation Ongoing	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 754,391	$ --	$ 199,391	$ 555,000	$ --
Non-Federal:	$ --	$ --	$ --	$ --	$ --
Other Federal:	$ --	$ --	$ --	$ --	$ --
TOTAL	$ 754,391	$ --	$ 199,391	$ 555,0000	$ --

Description of Study

There are a large number of local water user organizations operating irrigation and drainage facilities or projects constructed by Reclamation. Many of these developments have been in operation since early in the history of Reclamation, and conditions often develop which cannot be foreseen far in advance but need prompt remedial action. Funds will be utilized for studies of this nature on existing Reclamation projects.

The program for FY 1986 includes funds to continue R&B (Rehabilitation and Betterment) studies on Glasgow Division-Milk River Project, Malta Division-Milk River Project, and St. Mary's Canal-Milk River Project. The time requirements for accomplishing the R&B study and obtaining the necessary approvals would exceed the allowable time in which the work on the St. Mary's Canal should be completed in order for the District to receive the needed benefits. Therefore, funds allocated for St. Mary's will be divided between the other two studies in the Milk River Project. Also included for FY 1986 are funds to prepare an R&B report for canal lining on the Yuma Mesa Irrigation and Drainage District.

The amount programmed for FY 1987 includes funds to continue R&B studies on Malta Division-Milk River Project, Glasgow Division-Milk River Project, Yuma Mesa Irrigation and Drainage District, and the Ainsworth Unit R&B program. Funds are also included to initiate studies on Paonia Project R&B, and the Florida Project R&B.

The balance of the program for fiscal year 1986 and fiscal year 1987 will be used for studies of other existing projects as the need develops.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Kansas River Basin Water Operations Study		State Kansas
Initiation FY 1986	Completion FY 1989	Percentage Cost Sharing 50	Type of Study Special Investigation

SUMMARIZED FINANCIAL DATA

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 540,000	-0-	$115,000	$180,000	$245,000
Non-Federal:	540,000	-0-	115,000	180,000	245,000
TOTAL	$1,080,000	-0-	$230,000	$360,000	$490,000

DESCRIPTION OF STUDY

The mainstem Kansas River Basin is located in Northeast Kansas and flows in an eastward direction through Manhattan, Topeka, and Kansas City. The primary tributaries are the Blue, Republican, Solomon, Saline, Smoky Hill, and Delaware Rivers.

This study will be designed to review possibilties for increasing watershed yield through improved resource allocation. Consideration will be given to the physical, economic, social, and political aspects of water resources management.

As the municipal and industrial needs in the Kansas River Basin increase, additional water will be required. One method of generating additional supplies is to more efficiently use the existing water within the basin.

The major reservoirs and lakes, which will be considered in the basin operation, include Perry, Clinton, Tuttle Creek, Milford, Kanopolis, Wilson, Waconda, and Harlan County.

The State of Kansas and numerous water users along the Kansas River are supportive of an investigation to increase water availability in the basin. Non-Federal contributions amounting to $540,000 are expected.

There is no local opposition to the proposed study at this time; however, the administration of Kansas water rights may be affected.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Mid-Pacific	Kellogg Unit Reformulation Central Valley Project, Delta Division		California
Initiation	Completion	Percentage Cost Sharing	Type of Study
FY 1982	FY 1986	0	Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 547,775	$ 420,767	$ 127,008	$ --	$ --
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$ 547,775	$ 420,767	$ 127,008	$ --	$ --

Description of Study

The Kellogg Unit study area is located in the counties of Alameda and Contra Costa.

Relocation of the intake of the Contra Costa Canal and off-canal storage either at Kellogg or Los Vaqueros Reservoirs to provide operational flexibility, additional water quality improvement, and improve system reliability for Contra Costa Water District (CCWD) are being considered.

CCWD has expressed a need for improved water quality to satisfy M&I users. The District has also expressed a need for emergency storage to insure reliability of service to their customers.

Interested entities are State of California Department of Water Resources, Contra Costa Water District, East Bay Municipal Utility District, and East Contra Costa County Irrigation District. Contra Costa Water District indicated on January 21, 1983, that, whereas it continues to support the study, it will not be able to contribute funding for the study, but will continue to provide some in-kind services.

We are currently working on developing information for the Plan Formulation Working Document. Seven alternatives are being currently evaluated. Upon completion of the analysis, the best plan will be selected.

After rescoping, the total estimated cost of the study has decreased $189,523 in order to be consistent with corollary phases of the investigations which are being refined in the Offstream Storage and Cross Delta studies which were initiated in fiscal year 1986.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Kiamichi Hydropower Study		State Oklahoma
Initiation FY 1984	Completion FY 1986	Percentage Cost Sharing 3.9	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	497,147	197,147	300,000	---	---
Non-Federal:	15,000	5,000	10,000	---	---
Other Federal:	---	---	---	---	---
TOTAL	512,147	202,147	310,000	---	---

Description of Study

The study encompasses a 17-county area in southeastern Oklahoma including the counties of Atoka, Bryan, Carter, Choctaw, Coal, Garvin, Haskell, Johnston, Latimer, LeFlore, Love, Marshall, McCurtain, Murray, Pittsburg, Pontotoc, and Pushmataha.

The Southwest Power Pool projections show a need for 25,849 MW additional generating capacity by year 2002. Although not yet totally quantified, the local study area will have additional hydropower demands due to declining petroleum and natural gas reserves and additional energy requirements to support economic development. Most of the study area has topographic relief sufficient to support hydropower development. Reclamation's October 1980 "Phase II Hydropower Inventory" resulted in 54 potential sites in the study area. Independent preliminary assessment by the Corps of Engineers , as part of its comprehensive reconnaissance studies of the Arkansas and Red River Basins, reported 49 potential hydropower sites in the study area.

The Oklahoma Water Resources Board, RedArk Development Authority, Kiamichi Economic Development District of Oklahoma, and the Southern Oklahoma Economic Development District all support this study. The RedArk Development Authority and the Oklahoma Water Resources Board will be contributing data and services for the study.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Loup River Basin		State Nebraska
Initiation FY 1986	Completion FY 1986	Percentage Cost Sharing 0	Type of Study Special Investigation

SUMMARIZED FINANCIAL DATA

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 100,000	--	$100,000	$ --	$ --
Non-Federal:	--	--	--	--	--
TOTAL	$ 100,000	--	$100,000	$ --	$ --

DESCRIPTION OF STUDY

The Loup River Basin study area is in Central Nebraska. A recent Bureau study projects an inadequate water supply for a potential project in the basin. Recent data from area studies indicate the area is more complex geologically and hydrologically than previous studies indicated. The data requirements will have to be more extensive than planned, or the level of study detail will have to be lowered.

The people of the Loup Basin and the Nebraska Natural Resources Commission support development of the water resources of the basin.

There is also some local opposition to any proposed project in the Cedar River Basin. These individuals are likely to oppose a basin study on the premise it could lead to a development program in the Cedar River Basin.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Mesa-Delta M&I Ground Water Study		State Colorado
Initiation FY 1985	Completion FY 1988	Percentage Cost Sharing 15%	Type of Study Special Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,082,880	$237,880	$515,000	$180,000	$150,000
Non-Federal:	194,000	19,000	35,000	70,000	70,000
Other Federal:	---	---	---	---	---
TOTAL	$1,276,880	$256,880	$550,000	$250,000	$220,000

Description of Study

The Mesa-Delta M&I Ground Water Study area lies in the Upper Colorado River Basin in west-central Colorado and consists of portions of Mesa and Delta Counties. It includes the Grand Mesa, a high basalt capped plateau east of Grand Junction, and surrounding valleys formed by the Colorado and Gunnison Rivers and their tributaries.

Since 1972 the Bureau has been investigating the possibility of building a dam and reservoir near Grand Junction on the Gunnison River to supply M&I water to the Grand Valley area. The projected demand for industrial water did not materialize, consequently the Dominguez Reservoir Project has been set aside. An alternative to supplying the projected municipal demands by impounding surface water is to provide for these shortages from a ground water source believed to exist on Grand Mesa. This investigation will study the potential of developing this ground water source. Very preliminary investigations by the USGS indicate that a large amount of ground water may be in storage within the basalt flows that cap the flat-topped mountain. Furthermore, the flat surface of the mesa accompanied by high alpine precipitation amounts allows for significant recharge to the system. Development of this ground water becomes more attractive because of the favorable potential for hydroelectric development. It is conceivable that the pumping costs to remove the ground water from the basalt formation may be more than offset by the potential power generating capabilities. Other advantages to a ground water supply include: a relatively constant supply even during periods of drought, little if any salinity increase in the Colorado River, development of a water supply with significantly less cost than that of a dam and reservoir, a relatively small land requirement and associated environmental impact.

The need for supplemental M&I water in the Grand and North Fork Valleys in the near future still exists. The Grand Valley area is comprised of the communities of Palisade, Clifton, Grand Junction, and Fruita. Cedaredge, Paonia, Orchard City, Hotchkiss and surrounding rural populations are located in the North Fork Valley and would benefit from the M&I water.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Milk River Water Supply, P-SMBP		State Montana
Initiation FY 1984	Completion FY 1987	Percentage Cost Sharing 22	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 826,124	$ 390,102	$ 296,022	$140,000	$ --
Non-Federal:	215,000	125,000	80,000	10,000	--
Other Federal:	--	--	--	--	--
TOTAL	$1,041,124	$ 515,102	$ 376,022	$150,000	$ --

Description of Study

This project is located in north-central Montana. The project will divert water via a 48 mile canal from the Missouri River near Havre. Approximately 77,000 acre-feet of water would be provided to 149,660 irrigated acres in the Milk River Basin. Additionally, there is the potential for providing full-service irrigation water to 12,000 acres along the canal and municipal and industrial water to communities in the Milk River Basin. Water will also be provided for the Bureau of Land Management for fish and wildlife and stock water development.

Water shortages are experienced periodically by irrigators in the Milk River Valley. Water users are concerned about future shortages as other interests exercise their water rights on the Milk River. The Milk River flows through Canada. The Canadians are making plans to exercise their water rights in the future which will decrease the water supply to the existing irrigators on the Milk River. In addition, the Fort Belknap Indian Tribes are negotiating their reserved water right for natural flows of the Milk River with the State of Montana. They presently irrigate about 10,000 acres along the Milk and anticipate expanding this to about 24,000 acres. This will decrease water available to the other irrigators in the Basin.

The Milk River Water Supply Unit would provide replacement water so existing shortages would not increase after Canadian and Indian development. The Milk River Water Users Association and the Montana Department of Natural Resources and Conservation are both actively involved in this plan.

The Milk River Water Supply Study was changed from an Advance Planning Study to a Plan Formulation Study to be in compliance with the two-stage planning process.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Pacific Northwest	PROJECT - Minidoka Project, North Side Pumping Division Extension		STATE Idaho - Wyoming
INITIATION FY 1983	COMPLETION FY 1986	PERCENTAGE COST SHARING 0%	TYPE OF STUDY Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$509,782	$459,782	$50,000	$ -	$ -
Non-Federal:	-	-	-	-	
Other Federal:					
Total	$509,782	$459,782	$50,000	$ -	$

Description of Study

The project is located in Jerome and Minidoka Counties in south-central Idaho, near the town of Rupert.

In 1972 and continuing until 1977, the Bureau of Reclamation was involved in a study for development of the dry, Federally owned Extension lands, but a plan mutually acceptable to both the wildlife and agricultural interests could not be developed. In 1981, a compromise solution was negotiated and full agreement reached with these interests. The agreed upon approach would result in most of the potential farmland being placed under private ownership, but wildlife management provisions would be attached to a portion of the land as a condition of sale. Also, critical wildlife habitat areas would be preserved and improved. Drainage water from developed areas is being evaluated as a potential source of project water supply. The study will recommend, in cooperation with the State and local groups, a plan to develop lands in the Extension area and resolve related needs of the local irrigation districts and local government entities.

The project has potential for upfront non-Federal construction funding.

Work in fiscal year 1986 will consist of verification of information essential to confirm project viability preparatory to the final filing of the report/environmental statement and the seeking of congressional authorization.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Interregional	Project Minor Work in Connection with Completed Project Investigations		State Various
Initiation Ongoing	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 1,219,958	$ --	$ 599,958	$ 620,000	$ --
Non-Federal:	$ --	$ --	$ --	$ --	$ --
Other Federal:	$ --	$ --	$ --	$ --	$ --
TOTAL	$ 1,219,958	$ --	$ 599,958	$ 620,0000	$ --

Description of Study

After project studies have been completed at field level, reports must be approved at the Washington level and submitted to the State and other Federal agencies for review prior to their submissions to the Congress for authorization.

During this review process and during congressional consideration of the projects, it will be necessary to perform additional work on some of those investigations. Reformulation or reevaluation of plans are required for some proposals to reflect changes in planning criteria. It is not possible, however, to predict the amount of additional work required.

Furthermore, it occassionally is necessary to submit the reports or special drafts of reports to the local beneficiaries for an expansion of their desires and opinions prior to formal processing of the report to the Congress. The review sometimes necessitates additional work which cannot be foreseen and budgeted separately. In addition, there are a number of project investigations essentially completed on which work needs to be accomplished so that respective reports will provide plans consistent with changing priorities as well as new development and evaluation criteria.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Pacific Northwest	PROJECT - Northern Douglas County Cooperative Water Resources Study 1/	STATE Oregon

INITIATION FY 1986	COMPLETION FY 1989	PERCENTAGE COST SHARING 55	TYPE OF STUDY Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$ 500,000	$ -	$170,000	$215,000	$115,000
Non-Federal:	610,000	260,000	140,000	90,000	120,000
Other Federal:					
Total	$1,110,000	$260,000	$310,000	$305,000	$235,000

Description of Study

The study area is located in southwest Oregon (Douglas County). This study, which is being done jointly by Douglas County and the Bureau of Reclamation, is necessary to help provide for orderly, multipurpose water resources development in the Elk and Calapooya Creek drainages of the Umpqua River basin. Water Management and development plans resulting from the study could involve irrigation and municipal and industrial water supplies, flood control, hydropower, recreation, and enhancement of anadromous and resident fisheries and wildlife. Douglas County began data collection in FY 1984; Reclamation involvement began in FY 1986. A main purpose of the study is to determine resource capability. The program will define multipurpose water needs and concurrently determine if the various demands can be reduced or present levels of water utilization improved. Opportunities for new water storage facilities will be identified and evaluated.

Douglas County supports this study with in-kind services valued at over 50 percent of the estimated study cost. Potential is good for some front-end financing for construction resulting from this study.

1/ Previously called North Umpqua River Basin Water Resources Management Study. Name changed in cooperation with study participants - Douglas County, Oregon.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Lower Missouri	North Platte River Hydroelectric Power Study		Wyoming
Initiation	Completion	Percentage Cost Sharing	Type of Study
FY 1981	FY 1985	0	Project Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,215,290	$ 1,210,790	$ 4,500	$ -0-	$ -0-
Non-Federal:	-0-	-0-	-0-	-0-	-0-
Other Federal:	-0-	-0-	-0-	-0-	-0-
TOTAL	$1,215,290	$ 1,210,790	$ 4,500	$ -0-	$ -0-

DESCRIPTION OF STUDY

This study area is located on the Upper Platte River system about 35 miles southwest of Casper, Wyoming, in Natrona and Carbon Counties. This study includes detailed investigations of large-scale development of pumped-storage hydroelectric units on the North Platte River. Project features to be investigated include:

Alcova Pumped-Storage. - This unit would be an underground powerplant with the intake-outlet in Fremont Canyon 1 mile from the upper end of the existing Alcova Reservoir and about 2 miles below Fremont Canyon Powerplant. The 10,000-acre-foot forebay reservoir would be on the left canyon rim about 1,000 feet above Alcova Reservoir. This unit would produce 500 megawatts of peaking capacity with an average generating head of 990 feet.

Seminoe Pumped-Storage. - This unit would be located north of the existing Seminoe Reservoir. The upper reservoir site would be east of Seminoe Dam with a capacity of up to 10,000 acre-feet with a water surface area of about 144 acres. The unit, with an average generating head of 1,020 feet, would produce 500 megawatts of peaking capacity.

This investigation project was authorized by Public Law 96-375 approved 10/3/80 and completed in FY 1985 with an undelivered order of $4,500 extending into FY 1986.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Northwest Oklahoma Water Supply Study		State Oklahoma
Initiation FY 1984	Completion FY 1988	Percentage Cost Sharing 5.2	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	962,299	157,299	185,000	170,000	450,000
Non-Federal:	50,000	10,000	15,000	15,000	10,000
Other Federal:					
TOTAL	1,012,299	167,299	200,000	185,000	460,000

Description of Study

The study area encompasses the eight northwestern Oklahoma counties of Cimarron, Texas, Beaver, Harper, Wood, Ellis, Woodward, and Dewey.

The northwestern counties of Oklahoma comprise one of the most water-deficient areas of the State. Declining ground water supply, which is virtually the only reliable source of water, poses a critical problem. Recharge from the 18 inches of average annual precipitation cannot equal the present rate of withdrawal pumping. Declining water levels also threaten encroachment of fresh water aquifers by saline water. The major streams traversing or adjacent to the study area present water supply problems, primarily salinity which exceeds recommended public health standards for municipal and domestic use. Both surface and ground water supplies are adversely affected by periodic droughts. Limited water supplies appear to preclude additional irrigation development.

According to the Oklahoma State Water Plan dated April 1980, all of the counties in the study area are facing water shortage problems. Of the four major streams traversing or adjacent to the study area, the North Canadian River is now fully appropriated, and the Cimarron and Salt Fork Rivers are generally considered too saline for M&I or irrigation uses. The Canadian River on the south has unappropriated water, but the quality does not meet public health standards for municipal and domestic uses. The study will determine ways and means of solving these problems and satisfying the needs. All potential sources of water will be considered, including ground water, surface water from existing or potential sources, both within and outside the study area, and available water supplies of poor quality that might be made usable by special treatment or demineralization.

Northwest Oklahoma Water Suply Study (cont.)

Supporters of the study include the Oklahoma Water Resources Board, Oklahoma Economic Development Authority, and the Optima Water Authority. In-kind services have been offered to assist in performing the study. There is a potential for construction cost-sharing from the State of Oklahoma's Water Development Fund. The total estimated cost decreased $27,701 in fiscal year 1985 due to sizeable data gaps.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Pacific Northwest	PROJECT - Oakley Fan Groundwater & Recharge Investigation	STATE Idaho

INITIATION FY 1984	COMPLETION FY 1987	PERCENTAGE COST SHARING 67	TYPE OF STUDY Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$350,000	$ 50,000	$150,000	$ 150,000	$
Non-Federal:	710,000	420,000	195,000	95,000	
Other Federal:					
Total	$1,060,000	$470,000	$345,000	$ 245,000	$

Description of Study

Oakley Fan Groundwater and Recharge Investigation, Upper Snake River Project, Idaho.

The Oakley Fan Division, Upper Snake River Project, is located in south-central Idaho (Cassia County).

The study will evaluate the feasibility of eliminating the overdraft of a 100,000-150,000-acre ground-water pumping area which has been designated a critical ground-water area by the State of Idaho. It will determine ground-water overdraft, evaluate recharge feasibility through a demonstration project, evaluate the use of storage in the Upper Snake River basin for supplemental irrigation water supplies and consider other means to alleviate the overdraft. The study is a joint effort by local irrigators, Cassia County, the State of Idaho, Geological Survey, and the Bureau of Reclamation.

Local landowners and the State of Idaho initiated the study in 1983 through their funding sources, and preliminary ground-water work is being done. The landowners and the State of Idaho have requested that Reclamation, because of its plan formulation expertise, join in the cooperative effort. Authority was included in the fiscal year 1985 appropriations act to initiate this effort.

Ground-water overdraft in the area requires pump lifts of 350-600 feet, and these are increasing yearly. Local irrigators believe that land will start going out of production within 10 years because of the declining water table and increasing power costs.

Oakley Fan Groundwater & Recharge Investigation

The solution to be pursued is a combination use of the surface and ground waters. Excess surface water during normal and wet years would be used to recharge the aquifer and also to irrigate some lands. Pumping from the aquifer would resume during dry years. During normal and wet years, excess stored water is available for the area. The study will evaluate the hydrologic, engineering, and economic feasibility of the potential program.

Local landowners and the Idaho Water Resource Board have contributed study funding.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project Offstream Storage		State California
Initiation FY 1986	Completion FY 1988	Percentage Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 900,000	$ —	$ 150,000	$ 350,000	$ 400,000
Non-Federal:	900,000	—	150,000	350,000	400,000
Other Federal:	—	—	—	—	—
TOTAL	$1,800,000	$ —	$ 300,000	$ 700,000	$ 800,000

Description of Study

The study area includes various offstream reservior sites in the Central Valley that have been evaluated in the past and studies have been deferred or discontinued.

Although water conservation and wastewater reclamation will help reduce the dependence on additional surface water development, they are by no means sufficient to satisfy the water needs projected to occur during the next 30 years in the State of California. Offstream storage has a potential to serve much of the same needs as an onstream reservoir would serve, depending upon the reservoir sites, including additional water supplies, recreation, and replacement of supplies diverted to uses in the Trinity River. Additionally, if an offstream storage reservoir were located in the San Joaquin Valley, the size of the conveyance system diverting from the Delta could be reduced and greater flexibility could be achieved for staged development. A major purpose of the study will be to examine the various potential offstream sites from this standpoint. The evaluation will include updating previous estimates. Additional features necessary for integrating facilities with results of the San Joaquin Valley Conveyance Investigation will also be included.

Surplus flows from the Sacramento River are sufficient to allow at least 2,000,000 acre-feet of additional yield. If no additional storage were added to the Sacramento Valley, excess Delta outflow could be taken south to offstream storage reservoirs in the San Joaquin Valley. Numerous sites in the Sacramento and San Joaquin Valleys have been identified as potential offstream reservoir sites. The California Department of Water Resources (DWR) has begun an evaluation of potential sites between the Delta and San Luis Reservoir including Orestimba Reservoir. With offstream storage, surplus water could be pumped from the Sacramento

Offstream Storage (cont.)

River or the Delta during times when the system is operating at less than maximum capacity, stored until needed, and then delivered.

The DWR currently is examining alternative offstream sites to provide additional water supplies for the State Water Project. DWR will meet 50 percent of the costs of the study providing in-kind services. The funding breakdown is as follows: Federal funds: $900,000; Non-Federal funds: $900,000.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project Pima County/Santa Cruz River Ground Water Project		State Arizona
Initiation FY 1986	Completion September 1988	Percentage Cost Sharing 67	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 600,000	-	$100,000	$ 100,000	$ 400,000
Non-Federal:	1,200,000	-	200,000	200,000	800,000
Other Federal:	-	-	-	-	-
TOTAL	$ 1,800,000	-	$300,000	$ 300,000	$1,200,000

Description of Study

The project area is in Pima County, Arizona, within the Tucson Active Management Area, along the Santa Cruz River just north of the City of Tucson. The purpose of this investigation is to plan for the development and implementation of a ground-water recharge project in or near Tucson. The study will incorporate such program elements as selection of water resources; application of recharge technology, determination of necessary physical features, and the operation of water replacement systems; formulation of a monitoring program; identification of any economic, legal, institutional and environmental issues, and projection of planning problems associated with such systems; and recommendations of appropriate legislative and administrative actions.

Tucson is the largest city in the United States which is entirely dependent on ground water. Aquifer overdraft continues at an unacceptable rate resulting in a declining water table at rates that vary from 1 to 6 feet per year. In 1991, Central Arizona Project (CAP) water is expected to be delivered to Pima County, thus providing Pima County with a valuable tool to use toward reducing ground-water overdraft. However, even with CAP water, the projected water supply needs will not be fully satisfied. Current water resource assessment indicates that the water supply deficit will have to be made up of supplies from recharge, effluent reuse, CAP, and mined ground water. Surface runoff, estimated to be 27,000 acre-feet/year leaves the Tucson area. In addition, actual recharge from surface runoff may vary from less than 40 percent to as much as 90 percent of the floodflows in the stream channels. This variability occurs because of physical conditions and limited management practices.

Pima County/Santa Cruz River Ground Water Project (continued)

In addition to the surface runoff, effluent is also available for recharge. The City of Tucson provides an annual supply of 28,200 acre-feet of sewage effluent from the city treatment plants as part of the provisions of the Southern Arizona Water Rights Settlement Act (Settlement Act) of 1982. Although the effluent meets the quality required for agricultural use on some crops, the Settlement Act prohibits construction of a separate delivery facility to directly convey the effluent to the San Xavier Indian Reservation and the Schuk Toak District of the Papago Indian Reservation. Since CAP water will be used for municipal and industrial purposes, the effluent cannot be added into the Tucson Aqueduct without extensive treatment. One of the most promising wastewater treatment methods to resolve this problem is the artificial recharge of effluent into natural aquifers and recovery through wells, frequently referred to as "land treatment".

There is strong congressional and local support for this study. The Arizona Department of Water Resources which administers the Tucson Active Management Area supports the study. Local agencies supporting the study include: City of Tucson, Pima County Wastewater and Flood Control Districts, Southern Arizona Water Resources Association, University of Arizona Water Resources Research Center, and the Water Resource Coordination Committee. The potential for cost sharing on a Federal-local joint venture is due to extensive interest by water user organizations. The City of Tucson has submitted a Letter of Interest detailing plans for cost sharing approximately 67 percent of the investigation costs.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Missouri Basin	Platte River Water Use Options		Nebraska
Initiation	**Completion**	**Percentage Cost Sharing**	**Type of Study**
FY 1984	FY 1986	63	Special Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 104,019	$ 27,019	$ 77,000	-	-
Non-Federal:	175,000	175,000	-	-	-
Other Federal:	-	-	-	-	-
TOTAL	$ 279,019	$ 202,019	$ 77,000	-	-

DESCRIPTION OF STUDY

The Platte River Water Use Options Study area includes the Platte River Basin in Nebraska from the western border of the State to the confluence of the Platte and Missouri Rivers. The purpose of the study will be to:

a. determine the availability of water resources within the basin;

b. identify, define, and quantify the existing and foreseeable intrabasin demands on such resources within the state of Nebraska (including irrigation, ground-water stabilization and recharge, enhancement of water quality, small community and rural domestic water supplies, management of fish and wildlife habitat, public outdoor recreation, preservation of scenic qualities, flood control, hydroelectric power development, municipal and industrial water supplies, and such other demands as the study may identify;

c. identify, evaluate, and estimate costs for alternative methods of meeting the identified water demands, including but not limited to withdrawals from the Platte River, ground-water pumping, water conservation, and improved water management and

d. resolve the identified conflicts by making specified recommendations on the full and best utilization of the available water supply, including a priority ranking for implementing recommended water conservation and development projects.

The State of Nebraska (Nebraska Natural Resources Commission) supports the study. The Bureau of Reclamation continues to participate in the Platte River Forum and has been involved in the identification of priority projects. Nebraska will identify the priorities where possible under the state laws. The Bureau is providing plans and estimates at comparable levels for all Platte River related projects.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Southwest Region	PROJECT Pojoaque Valley Conjunctive Ground Water/ Surface Water Management Study		STATE New Mexico
INITIATION FY 1986	COMPLETION FY 1986	PERCENTAGE COST SHARING 0%	TYPE OF STUDY Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$ 150,000	$ --	$ 150,000	$ --	$ --
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
Total	$ 150,000	$ --	$ 150,000	$ --	$ --

Description of Study

The Pojoaque Valley is located in Santa Fe County in north-central New Mexico.

The Indian pueblos and their neighbors within the Pojoaque Valley area have had water supply and use conflicts. These conflicts were intensified by construction of Nambe Falls Dam and Reservoir, a tributary unit of the San Juan-Chama Project. Residents of the valley are presently involved in a major water rights lawsuit, New Mexico V. Aamodt. There is a need to evaluate local water supplies and present uses, to address future problems and needs. Surface water resources of the Pojoaque River Basin and ground water resources of the Tesuque aquifer system which underlies over one-half of the basin are the currently available sources from which present demands are being met. Federal assistance is needed to evaluate water supply and use conflicts, future needs, and to recommend alternative resolutions for water supply problems among the Indian pueblos and their neighbors within the Pojoaque Valley area.

Since there is no organized entity to represent all the water users of the basin, the potential for cost-sharing appears unlikely.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Prairie Bend Unit		State Nebraska
Initiation FY 1984	Completion FY 1987	Percentage Cost Sharing 12	Type of Study Project Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 1,654,628	$ 950,549	$303,079	$ 401,000	-
Non-Federal:	240,000	115,000	105,000	20,000	-
Other Federal:	-	-	-	-	-
TOTAL	$1,894,628	$ 1,065,549	$408,079	$421,000	-

DESCRIPTION OF STUDY

The Prairie Bend Unit, which is an authorized feasibility study, is located in the Platte River Basin area north of the Platte River in central Nebraska. The investigation will develop and assess multiobjective alternatives to irrigate approximately 120,000 acres of land using water from the Platte River; stabilize ground water in an area of about 230,000 acres; provide small community and rural domestic water supplies; provide outdoor recreation; maintain and enhance habitat for waterfowl, including the endangered whooping crane, enhance the quality of ground water; and other beneficial uses.

The study will evaluate the availability of water resources in the area for all beneficial uses and the engineering, economic and financial feasibility of alternatives.

The Central Nebraska and Twin Valley Conservation Associations and the Central Platte Natural Resources District (CPNRD) strongly support the study. Non-Federal contributions amounting to $240,000 of cost-sharing and in-kind services are committed by the CPNRD.

The total estimated cost was increased $70,406. The additional funds are required to provide for more extensive environmental studies related to the questions of jeopardy impacts to the endangered whooping crane, the sandhills crane, and the migratory waterfowl passing through the Central Platte, which comprises a nationally important resource. These additional environmental considerations are critical to any future water development plans along the Platte River.

Prairie Bend Unit (cont.)

Efforts to date on the unit have been:

-Extensive public involvement programs to help identify needs and concerns to inform participants.

-Extensive data collection relating to the Platte River habitat. These data include instream flow, river geomorphology, aerial thermography, infrared photography, survey of adjacent land use, and other habitat data.

-Hydrology and ground-water computer models have been developed.

-Engineering data and guides have been compiled. Many potential reservoir sites have been identified and costs estimated.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project Refuge Water Supplies		State California
Initiation FY 1986	Completion FY 1987	Percentage of Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 250,000	$ --	$ 80,000	$ 170,000	$ --
Non-Federal:	250,000	--	80,000	170,000	--
Other Federal:	--	--	--	--	--
TOTAL	$ 500,000	$ --	$ 160,000	$ 340,000	$ --

Description of Study

The study area encompasses the California Central Valley hydrologic basin.

The 1976-77 drought brought to focus the principal Federal and State waterfowl refuge problem--water shortage. Water shortage causes many interrelated habitat management problems including: disease suppression and control; water quality; timing of water deliveries; wildlife food production; food accessibility; hunting; fishing; trapping and other recreation; rising refuge costs; and water and power conservation efficiencies. Federal, State and privately managed refuges need additional water, power and facilities. The Bureau will study methods by which water and power supplies can be conveyed to affect refuge areas.

The Central Valley is the principal wintering ground for the Pacific Flyway, providing habitat for about 60 percent of the Flyway's waterfowl. Flyway management is governed in part by international treaties with Mexico, Canada, and Japan. In the National Priority for Protection, the Central Valley ranks number one for wintering habitat and number four overall. Annually, the Central Valley supports about 5.6 million wintering waterfowl, along with other migratory and resident water-related wildlife.

Support for this study has been shown through the Central Valley Fish and Wildlife Management Study by the Fish and Wildlife Service, Soil Conservation Service, California Departments of Fish and Game and Water Resources and private groups such as the California Waterfowl Association.

The State of California will meet 50 percent of the costs of the study providing in-kind services. The funding breakdown is as follows: Federal funds: $250,000; non-Federal funds: $250,000.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project San Bernardino Valley Ground Water Project		State California
Initiation FY 1987	Completion September 1989	Percentage Cost Sharing 50	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 500,000	-	-	$150,000	$ 350,000
Non-Federal:	500,000	-	-	150,000	350,000
Other Federal:	-	-	-	-	-
TOTAL	$1,000,000	-	-	$300,000	$ 700,000

Description of Study

The project study area is in San Bernardino County, California. The purpose of the study is to investigate high ground-water levels in the San Bernardino Valley, possible solutions and uses for the water.

The high ground-water levels in the San Bernardino Valley ground-water basin are causing basement flooding which increases the potential for liquefaction of ground in the City of San Bernardino in the event of an earthquake. The problem also affects the management of ground water in the Santa Ana River basin, which affects water users in three southern California counties. A proposed solution would be to remove and transport the excess water for infiltration in basins with a water deficit, or deliver the excess water to the California State Aqueduct System.

Reclamation will investigate alternative uses of the water including conveyance to known water deficient basins, sale of water to surrounding communities, and conveyance to agricultural users. Facilities could include a well field, pipelines, and spreading basins to percolate water into the ground. A plan for management of the entire ground-water basin, including the management of recharge, would be a part of the study. The U.S. Geological Survey has developed a finite-element digital model of the basin to predict behavior under various conditions.

San Bernardino Valley Ground Water Project (continued)

The ground-water basin underlies a populous area of southern California. The damages from a high water table and the associated threat of aggravated damage from an earthquake in this area would affect many people, and a regional transportation center. Beyond this, the ground-water basin is not being managed in an optimum way for water yield. Local efforts at dealing with the problem appear to be fragmented and the Santa Ana Watershed Project Authority believes that a solution depends on the Bureau of Reclamation which can exercise a credible coordinating role in addition to providing the expertise to analyze the ground-water basin and to develop a sound project plan.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project San Jacinto Project	State Texas

Initiation 10/1/83	Completion 9/30/87	Percentage Cost Sharing 24.2	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	869,463	474,463	275,000	120,000	--
Non-Federal:	210,000	50,000	60,000	100,000	--
Other Federal:					
TOTAL	1,079,463	524,463	335,000	220,000	--

Description of Study

The study area is located in the San Jacinto River Basin in southeast Texas.

Significant industrial expansion and urban development are rapidly increasing the demands on the area's surface and ground water supplies. Existing supplies can meet only a portion of the demands in the basin. Currently, ground water is being over-used, causing subsidence, fault movements, and aggravating flood problems due to changes in the land surface. Additional new surface water supplies are needed to replace extensive ground water pumping in the area. Flood control is also needed in Montgomery County. Two sites having the greatest potential for development of addition surface water supplies in the basin are the Cleveland and Lake Creek sites. In comparison to total basin needs, these resources would provide only a short-term solution, yielding no more than 100,000-150,000 acre-feet. The city of Houston is primarily concerned in providing service to areas inside its boundaries. However, there are numerous municipal water utility districts and communities immediately outside the city of Houston boundaries that are currently on ground water. The Harris-Galveston Subsidence District is exercising its regulatory authority to curtail ground water pumping and encourage conversion to surface supplies. There is some reluctance to strongly mandate conversion unless some alternative supplies are available.

The San Jacinto River Authority has been cost sharing part of the study costs and has specifically earmarked money in its budget for further study expenses. Front-end financing appears to be agreeable. Further commitments will be pending completion of Reclamation studies.

The total estimated cost increased $47,895 due to contract and contract modification costs. The investigation is scheduled to be accelerated approximately 6 months and be completed in fiscal year 1987.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Mid-Pacific	Project San Joaquin Valley Conveyance Central Valley Project		State California
Initiation FY 1985	Completion FY 1986	Percentage Cost Sharing 48	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 1,193,282	$ 445,882	$ 747,400	$ —	$ --
Non-Federal:	1,100,000	357,000	743,000	—	--
Other Federal:	—	—	—	—	—
TOTAL	$ 2,293,282	$ 802,882	$1,490,400	$ --	$ --

Description of Study

The study area includes the San Joaquin River and Tulare Lake hydrologic basins encompassing parts of San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern Counties.

The purpose of the study is to formulate a plan by which additional water supplies can be imported to the San Joaquin Valley to assure that current levels of agricultural production can be maintained in the future.

There is a major need in the study area for a supplemental water supply of some 2 million acre-feet to replace supplies that are estimated to be obtained from ground-water overdraft by the year 2010. The present estimate of overdraft is 1 million acre-feet. Corollary problems associated with the overdraft are increasing groundwater pumping costs, water-quality deterioration, and land subsidence. Other water and related problems in the study area are drainage, erosion and sedimentation, flooding, and fish and wildlife deterioration.

Discussions with the California Department of Water Resources (DWR) and the Mid-Valley Water Authority have led to the development of a Letter of Intent defining the goals and objectives of the study, and stating the Authority's willingness to share in its costs, and DWR's willingness to contribute its assistance through in-kind services with various data and analyses.

San Joaquin Valley Conveyance (continued)

Construction of facilities to develop and convey surface water supplies to the San Joaquin Valley has not kept pace with the need for water service. As a consequence, pumpage of ground-water principally for irrigation in many places in the valley exceeds the rate of replenishment. As continued ground-water development occurs, water levels will continue to decline and pumping costs will increase. This will result in many areas being unable to compete economically and going out of production.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Lower Colorado	Project Santa Margarita Project		State California
Initiation FY 1982	Completion FY 1986	Percentage Cost Sharing --	Type of Study Project Investigation

SUMMARIZED FINANCIAL DATA

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,482,000	$1,417,173	$ 64,827	$ --	$ --
Non-Federal:	--	--	--	--	--
Other Federal:	--	--	--	--	--
TOTAL	$1,482,000	$1,417,173	$ 64,827	$ --	$ --

DESCRIPTION OF STUDY

The purpose of this investigation was to develop the water supply of the Santa Margarita River in order to supply supplemental municipal and industrial water to Camp Pendelton and Fallbrook Public Utility District and supplemental irrigation water to the District.

Fallbrook Reservoir would have a capacity of 36,150 acre-feet and De Luz Reservoir, located on Camp Pendelton, would have a capacity of 100,000 acre-feet, plus 40,000 acre-feet flood surcharge. A buried concrete pipeline would extend from Fallbrook Dam to the Fallbrook area and a buried concrete pipeline would extend from De Luz Dam northwestward across Camp Pendelton to supply various installations with water. Recreation facilities would be built at Fallbrook Reservoir and at De Luz Reservoir.

Increased costs of $105,000 and a seven month delay in the supplemental report were due to the need to address an additional alternative, including environmental concerns, additional river sediment transport and beach sand studies. The supplemental report will be completed in fiscal year 1986 at which time studies will be terminated due to a lack of local support.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Seminoe Dam Modification		State Wyoming
Initiation FY 1986	Completion FY 1988	Percentage Cost Sharing 50	Type of Study Special Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 260,000	-0-	100,000	$ 70,000	$ 90,000
Non-Federal:	260,000	-0-	100,000	70,000	90,000
Other Federal:	-	-	-0-	-	-
TOTAL	$ 520,000	0	200,000	$ 140,000	$ 180,000

DESCRIPTION OF STUDY

Seminoe Dam is located in Carbon County, Wyoming. Flood control along the North Platte River has caused problems for many years. Additional storage in Seminoe Reservoir for this purpose would be relatively inexpensive. There are North Platte River communities who would like to buy surface terminal storage to regulate their water rights. Recent seismic activity in Wyoming has prompted a complete reevaluation of the geologic stability of all foundations of the North Platte River reservoirs. In addition, new estimates of the probable maximum flood (PMF) at this site are larger than previous estimates. All Bureau of Reclamation structures are to be restudied using the latest flood PMF estimates and a report prepared outlining the necessary modifications. Recreational impacts will be examined. This study is supported by the Water Development Commission, State of Wyoming, and communities along the North Platte River.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project South Dakota Water Delivery Study		State South Dakota
Initiation FY 1982	Completion FY 1986	Percentage Cost Sharing 32	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 882,003	$ 813,178	$ 68,825	$ --	$ --
Non-Federal:	275,000	225,000	50,000	--	--
Other Federal:	--	--	--	--	--
TOTAL	$1,157,003	$1,038,178 1/	$ 118,825	$ --	$ --

Description of Study

The purpose of this study is to investigate the potential of supplying additional water from the Garrison Diversion Unit in North Dakota to the James River in South Dakota. The additional water provided to South Dakota would be used for irrigation, municipal and industrial, recreational, and fish and wildlife purposes along the entire James River area in South Dakota. The study includes public involvement, hydrologic and environmental studies, identification of lands which can be served for irrigation, engineering designs and cost estimates, and economic analyses. All alternatives analyzed will use features of Garrison Diversion Unit, and some alternatives will include structures in South Dakota for water delivery and storage.

Awaiting the outcome of the affects of the Garrison Commission Plan, including legislation to implement the commission plan, has caused slippage in completing plan formulation. Since the objective of the study is to investigate the potential of supplying additional water to South Dakota using Garrison Diversion Unit facilities in North Dakota, the facilities need to be defined.

A Garrison Study Management Board has been created which includes the conservancy subdistricts along the James River in South Dakota. Considerable interest has been generated by the creation of this board and local support is evident. The study has been included in the South Dakota State Water Plan.

The Department of Water and Natural Resources has ranked the study among the top five in priority.

The James River Water Development District is the project sponsor. They will provide cost sharing support for the study by furnishing engineering and other services. The State of South Dakota is taking the lead in public involvement.

South Dakota Water Delivery Study

[1] These costs do not include the $1.7 million appropriated by Congress as part of the Garrison Diversion Unit construction funds for use in connection with South Dakota Water Delivery Study. In FY 1985, about $260,000 of these funds were expended for surveys and water quality data collection and analysis. In FY 1986, about $400,000 will be used for completing project investigations.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Southwest	Southeast Oklahoma Water Supply Study		Oklahoma
Initiation	Completion	Percentage Cost Sharing	Type of Study
10/1/84	9/30/88	4.8	Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	1,241,496	241,496	300,000	230,000	470,000
Non-Federal:	60,000	20,000	20,000	20,000	0
Other Federal:					
TOTAL	1,301,496	261,496	320,000	250,000	470,000

Description of Study

The study area is located in southeastern Oklahoma in the counties of Atoka, Bryan, Carter, Garvin, Johnston, Love, Marshall, and Murray.

Study is needed to provide a critical water and related land resources development component of the Comprehensive Economic Development Plan being prepared under leadership of the RedArk Development Authority. A comprehensive water resource development component is needed because the study area is economically underdeveloped, has unmet current and projected M&I water supply needs, and requires additional hydropower generating capacity. This study will address the maximum amount of economic development that can be achieved in the study area by multipurpose water resource development, and will determine the most cost-effective and acceptable solutions to water quality problems.

The Oklahoma Water Resources Board, RedArk Development Authority, Southern Oklahoma Economic Development District, and the Oklahoma Rural Water Association support this study. In-kind services have been committed to assist in the study. There is good potential for construction cost-sharing from the State of Oklahoma's Water Development Fund. The total estimated cost decreased $8,504 due to actual study contract costs in fiscal year 1985 and increased $60,000 due to Congressional write-in for fiscal year 1986 to cover further contract costs.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project South Platte River Operations Study		State Colorado
Initiation FY 1987	Completion FY 1989	Percentage Cost Sharing 50	Type of Study Special Investigation

SUMMARIZED FINANCIAL DATA

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 315,000	-0-	-0-	$ 115,000	$ 200,000
Non-Federal:	315,000	-0-	-0-	50,000	265,000
Other Federal:	-	-0-	-	-	-
TOTAL	$ 630,000	-0-	-0-	$165,000	$465,000

DESCRIPTION OF STUDY

The South Platte River Operations Management Study area includes the entire South Platte River Basin in Colorado. This study will be designed to review possibilities for increasing watershed yield through improved water management. Consideration will be given to the physical, economic, social, and political aspects of water management.

The program will emphasize within a multiobjective decisionmaking framework the use of watershed modeling, risk analysis, and data management techniques to improve real-time operation of projects as alternatives to meet needs for water and waterrelated services through construction of new projects.

Additional water is needed or better utilization of the existing supply is required to support the Denver metropolitan growth. The State of Colorado and numerous water users along the South Platte River are supportive of an investigation to increase water availability in the basin.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
Lower Colorado	Spring Canyon Pumped Storage Project		Arizona
Initiation	Completion	Percentage Cost Sharing	Type of Study
FY 1986	September 1988	50	Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 750,000	$ -	$ 240,000	$ 270,000	$ 240,000
Non-Federal:	750,000	-	410,000	270,000	70,000
Other Federal:	-	-	-	-	-
TOTAL	$1,500,000	$ -	$ 650,000	$ 540,000	$ 310,000

Description of Study

The Spring Canyon Pumped Storage site is adjacent to Lake Mead in Mohave County, Arizona, about 10 air miles east of Temple Bar, Arizona, or 40 air miles east of Boulder City, Nevada.

The objective of this investigation is to develop a plan for a pumped storage project to produce new generating capability to meet anticipated peaking power requirements in the Pacific Southwest marketing area. The project could provide for an ultimate capability to produce between 1,000 and 4,000 Mw of peaking power. The construction could proceed in stages. A dam, three dikes, an underground powerhouse, and a tailrace tunnel complex would be constructed. The upper reservoir would have maximum capacity of 218,000 acre-feet with an annual net project evaporation of 3,700 acre-feet. Lake Mead would serve as the lower reservoir. The rated operating head would be 740 feet. Transmission lines would be built primarily within existing transmission line corridors.

Utilities in the southwest are retiring oil- and gas-fired peaking units which are costly to operate. Also in order to meet anticipated future base-load demand, these utilities are adding coal- or nuclear-fired generating resources which are extremely inefficient in providing peaking

Spring Canyon Pumped Storage Project (continued)

capacity. Both of these action accentuate the need for additional future peaking capacity. There are a number of transmission arrangements within the Federal Power System that could be enhanced by the additional peaking capacity provided by the Spring Canyon Pumped Storage Project.

This investigation is the outcome of a special study completed in fiscal year 1981. The appraisal level investigation indicated that the Spring Canyon Pumped Storage Project is engineeringly feasible and economically justified with a benefit-cost ratio estimated to be 1.7 to 1.

Since the Spring Canyon Pumped Storage Project is within the Lake Meade National Recreation area, Reclamation is maintaining close coordination with the local National Park Service (NPS) office and routes all information disseminated to the non-Federal participants through the NPS regional office in San Francisco. NPS will perform a study on land values and acquisition options, and or recreation impacts and mitigation, if necessary.

Reclamation has made initial contact with major utilities in Nevada, Arizona, and California. Response to cost sharing for planning studies has been positive. A number of utilities have submitted Letters of Intent to cumulatively share at least 50 percent of the estimated $1.5 million in study costs.

A cost share planning agreement is scheduled to be finalized in January 1986.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Taos Community Ditch Study		State New Mexico
Initiation 10/1/84	Completion 12/31/86	Percentage Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	59,178	44,178	15,000	--	--
Non-Federal:	0	0	0	--	--
Other Federal:					
TOTAL	59,178	44,178	15,000	--	--

Description of Study

The study area is located in the vicinity of the community of Taos, in Taos County in northern New Mexico.

This special study is to develop a rehabilitation plan for 14 Taos Community irrigation systems. These privately owned and operated ditches are in varying degrees of disrepair, outdated (several are over 100 years old), and have become a burden to maintain and inefficient to operate. In the past, uncoordinated attempts have been made to improve the ditches, but proved to be unsuccessful. This rehabilitation will be the first endeavor at providing the local people a coordinated "blueprint" of rehabilitation needs based on sound engineering evaluation. The community ditch associations remain an important part of the cultural heritage and irrigation economy of the State, particularly in northern New Mexico. Rehabilitation of the community irrigation systems would conserve water and greatly reduce the hours of labor now required to irrigate the land and maintain the systems. Because much of the irrigation under these community ditches is basically subsistence farming, the community ditch associations need assistance to proceed with such rehabilitation.

The Tres Rios Association supports the study.

The total estimated cost decreased $20,822 which reflects actual study costs.

The study will be completed with the preparation of a final technical memorandum in early fiscal year 1986.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Interregional	Project Technical Assistance to States		State Various
Initiation Ongoing	Completion Ongoing	Percentage of Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimated FY 1987	Balance To Complete
Reclamation:	$ 3,017,404	$ --	$1,452,404	$1,565,000	$ —
Non-Federal:	$ --	$ --	$ --	$ —	$ —
Other Federal:	$ --	$ --	$ --	$ —	$ --
TOTAL	$ 3,017,404	$ --	$1,452,404	$1,565,000	$ —

Description of Study

The program involves the 17 Western States. It is designed so that Reclamation can assist the States in water management evaluations. Data, technical knowledge, and expertise will be provided to the States to aid their allocation of water resources, including maintenance of low-flow regimes and user needs. These data will be organized into a form useful to the States for managing instream-flow, ground-water, and water quality problems. States will also be aided in technical aspects of evaluating phases of the management of water as a resource. For example, in some cases, the task will be simply providing available data to the States, but in others, the complex interrelationships of surface water and ground water, various user demands, and instream flow requirements could make the job formidable and very involved requiring specialized hydrologic and economic analyses for the States. However, entire project investigations will not be performed for the State, nor will specific investigations be conducted for State-licensed agencies such as irrigation districts. Various States have requested assistance relative to water resources management.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Southwest	Project Texas Big Sandy Project		State Texas
Initiation 10/1/83	Completion 9/30/86	Percentage Cost Sharing 11.5	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	784,146	464,146	320,000	—	—
Non-Federal:	90,000	40,000	50,000	—	—
Other Federal:					
TOTAL	874,146	504,146	370,000	—	—

Description of Study

The study area is located on Big Sandy Creek in Wood and Upshur Counties in northeastern Texas.

In the demand area, total water supply needs were 58,800 acre-feet/year in 1980 and are projected to range from 198,400 to 252,600 acre-feet/year in the year 2030. Total existing surface and ground water supplies available to meet these needs are about 65,500 acre-feet/year. Total additional water supplies ranging from about 140,000 to 194,000 acre-feet/year are needed to meet projected 2030 total water demands. Because of reductions in the quality of wildlife habitat in the Upper Sabine Basin, there is a need to preserve good quality natural areas and to manage disturbed areas back to their original conditions. According to the 1980 Texas Outdoor Recreation Plan, there is a significant need in the Upper Sabine Basin for the type of recreation facilities normally provided at Reclamation projects. Big Sandy Creek Reservoir, which has been identified as the preferred alternative, would meet the total projected water needs of the demand center until about the year 2000, at which time additional supplies would have to be available. This alternative would also meet needs for environmental preservation and (depending on participation by a local sponsor) would meet needs for water-based public recreation facilities and access. In-kind services for fiscal year 1986 have been committed by the Sabine River Authority. Prospects are good for up-front construction costs. The Sabine River Authority and Texas Water Development Board have been designated as local cosponsors for the Texas Big Sandy Project and will continue in this role.

The total estimated cost decreased $57,196 due to lower than anticipated contract costs.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION PN	PROJECT - Umatilla Basin Project		STATE Oregon
INITIATION FY 1981	COMPLETION FY 1986	PERCENTAGE COST SHARING 0%	TYPE OF STUDY Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$1,459,965	$1,209,965	$250,000	$ -	$ -
Non-Federal:	-	-	-	-	-
Other Federal:					
Total	$1,459,965	$1,209,965	$250,000	$ -	$ -

Description of Study

The Umatilla River basin is located in Umatilla and Morrow Counties, Oregon, and centers near the town of Pendleton.

The emphasis of this study is to identify measures to restore runs of salmon and steelhead in the Umatilla River through flow augmentation and by providing fish passage facilities. Existing irrigation water supplies would continue to be provided under the basin plan. The study is being coordinated with the Confederated Tribes of the Umatilla Indian Reservation, State and Federal fish and wildlife agencies, and irrigation districts and municipalities.

The principal feature of the preferred Plan is a program wherein water would be pumped from the Columbia River distribution to the present irrigators. Use of the imported water by the irrigators would permit Umatilla River water, which is now diverted or stored for irrigation, to remain in the river to improve flow conditions in the lower basin.

The project has potential for upfront construction funding.

Work in fiscal year 1986 will consist of verification of information essential to confirm the project viability preparatory to the final filing of the report/environmental statement and the seeking of congressional authorization.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION PN	PROJECT - Upper Snake River Basin Storage Optimization		STATE Idaho - Wyoming
INITIATION FY 1987	COMPLETION FY 1988	PERCENTAGE COST SHARING 50%	TYPE OF STUDY Special Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 FY 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$230,000	$ -	$ -	$200,000	$30,000
Non-Federal:	230,000	-	-	200,000	30,000
Other Federal:					
Total	$460,000	$ -	$ -	$400,000	$60,000

Description of Study

This special investigation encompasses the upper Snake River basin in Idaho upstream to the headwaters in Wyoming.

The study will evaluate the historical use of Bureau of Reclamation storage reservoirs in the upper Snake River basin, review the effect of hydrologic cycles on water use and storage capability, review the originally intended uses of the storage when it was placed under contract, and identify potentials for further optimization of the existing storage resource. A second objective of the study will be to provide updated information on Snake River storage potentials including water yields, cost, potential markets, and social and environmental effects.

The investigation's objectives are consistent with critical current State of Idaho concerns over irrigation, hydropower, Indian, and reserved water rights, water right priorities, and the availability of water to meet these existing and identified future water needs in the upper basin.

Reclamation's study would be one element of a multiparty effort to formulate an overall surface and ground water program for the basin.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Upper Colorado	Project Wasatch Front Total Water Management		State Utah
Initiation FY 1984	Completion FY 1988	Percentage Cost Sharing 0	Type of Study Special Investigation

Summarized Financial Data

Plan Formulation Funding Schedule

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$1,364,331	$857,651	$316,680	$90,000	$100,000
Non-Federal:	---	---	---	---	---
Other Federal:	---	---	---	---	---
TOTAL	$1,364,331	$857,651	$316,680	$90,000	$100,000

Description of Study

The Wasatch Front Total Water Management study covers the area along the Wasatch Front from Nephi in central Utah, north to the Utah-Idaho stateline.

The Wasatch Front is primarily urban, with a 1980 population of 1,191,034 (includes Cache County), or 82 percent of Utah's total. The growth rate of this area is faster than the State as a whole, and the corresponding demand for M&I water is substantial.

The primary goal of this study is to identify opportunities for assisting water organizations along the Wasatch Front to more efficiently use their water resources in future years. The Environmental Protection Agency requested that this study for the Wasatch Front be initiated to: (1) provide data relative to water quality and water requirements of various water users; (2) develop a program for using agricultural waste water for municipal and industrial uses; and (3) evaluate ground water as a potential water source. In addition, the Secretary of the Interior has asked the Bureau of Reclamation to conduct an investigation of dual water systems for the Salt Lake Valley.

Wasatch Front Total Management (continued)

M&I water demand projections indicate that developed water supplies will meet the needs of the Wasatch Front until about the year 2015 provided present program schedules are met. After that, additional water sources will either have to be developed or made available through exchanges, conversion of irrigation water, or conservation measures. Additional sources could possibly be obtained through imported water from the Bear River Basin, reuse of poor quality waste water, and conjunctive use of ground water and surface water supplies.

This study will integrate, coordinate, and expand ongoing activities into an organized planning effort within the basin. The following tasks will need to be accomplished:

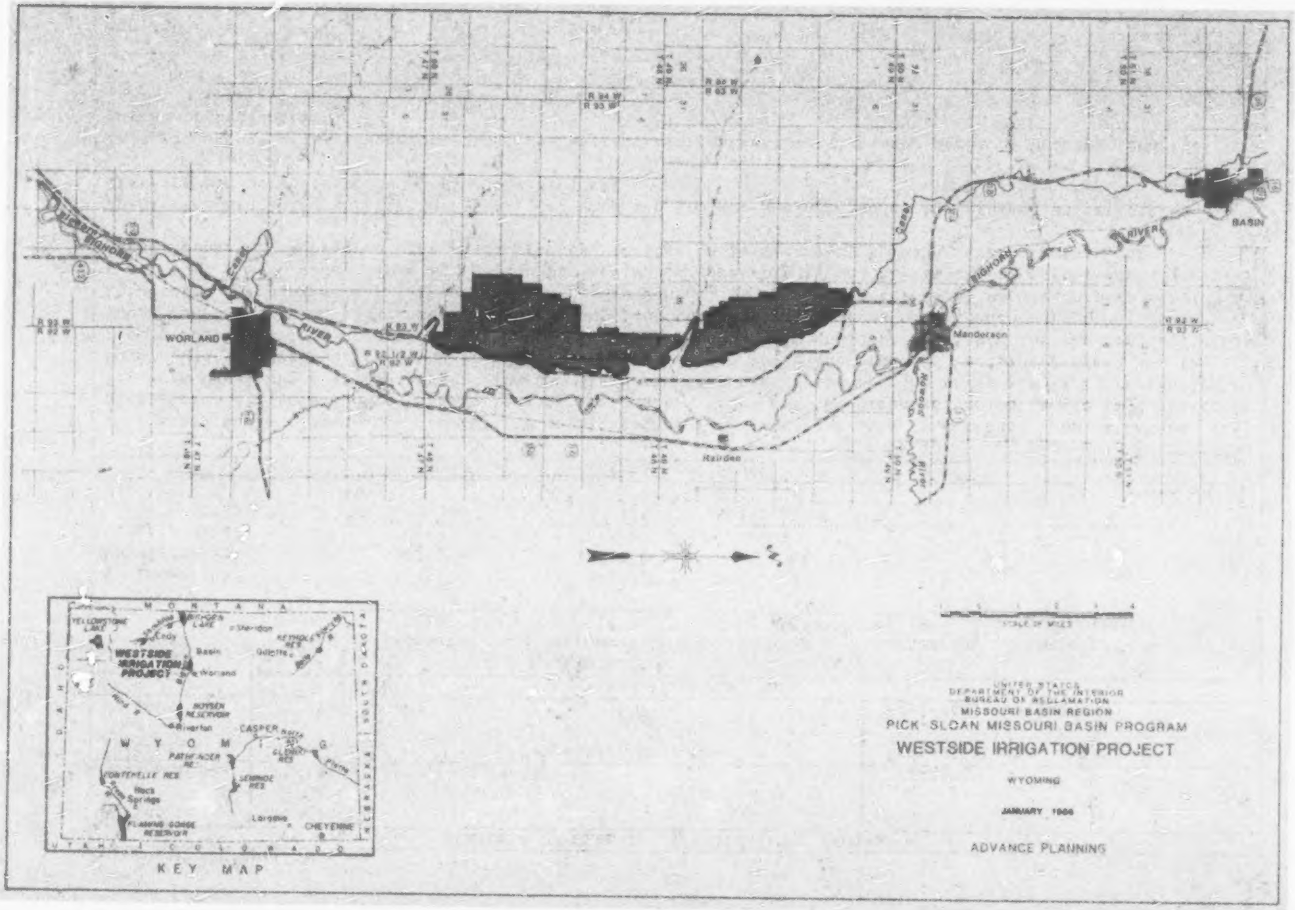
1. Improve the data base for determining the availability of surface and ground water supplies for development and management potentials.

2. Assess, through data synthesis, the resource capability of the river basins in terms of water, land, water quality, environmental, and recreational resources.

3. Update current and long term (through year 2020) water needs in the Wasatch Front area. Relate the water resources capability of the various river basins for meeting and solving identified problems and needs.

4. Identify and evaluate opportunities for better water management.

5. Make recommendations to solve identified problems.


WORLAND
BIGHORN RIVER
Canal
RIVER
Manderson
BASIN
Hyattville
Nowood River
Rairden
R 93 W
R 92 W
R 93 1/2 W
R 94 W
R 93 W
KEY MAP
MONTANA
IDAHO
UTAH
COLORADO
NEBRASKA
SOUTH DAKOTA
WYOMING
YELLOWSTONE LAKE
BIGHORN LAKE
Cody
Sheridan
Basin
Gillette
KEYHOLE RES
WESTSIDE IRRIGATION PROJECT
Worland
BOYSEN RESERVOIR
Riverton
Wind R
CASPER
North Platte
GLENDO RES
PATHFINDER RES
SEMINOE RES
FONTENELLE RES
Rock Springs
FLAMING GORGE RESERVOIR
Laramie
CHEYENNE
Platte
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
PICK–SLOAN MISSOURI BASIN PROGRAM
WESTSIDE IRRIGATION PROJECT
WYOMING
JANUARY 1966
ADVANCE PLANNING

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region Missouri Basin	Project Westside Irrigation Project		State Wyoming
Initiation FY 1985	Completion FY 1986	Percentage Cost Sharing 57	Type of Study Project Investigation

Summarized Financial Data

	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 132,500	$ 32,478	$ 100,022	$ —	$ —
Non-Federal:	167,000	125,000	42,000	—	—
Other Federal:	—	—	—	—	—
TOTAL	$ 299,500	$ 157,478	$ 142,022	$ —	$ —

Description of Study

This study would examine the feasibility of irrigating 7,200 acres of land in northern Wyoming between the cities of Basin to the north and Worland to the south. Water for the proposed project would be supplied by Big Horn Canal which diverts water from the Big Horn River near Worland. The river itself is controlled by Boysen Dam and Reservoir. About 13,800 acres are irrigated above the proposed Westside Project and the return flow from this area along with water from Boysen Reservoir would be available for the project. This would necessitate the enlargement of the capacity of the canal as well as modifications to other canal structures. Approximately fifteen pumping plants would lift water from the canal with each pump serving an area about 1 mile wide. This irrigation project would convert marginal BLM rangeland into productive irrigated cropland. Because of the areas aridity, irrigation is necessary to make farming economical.

The irrigators below the Big Horn Canal, to whom the project would be added have formed an irrigation district for purposes of developing the project.

This project is a joint development of the Westside Irrigation District, the State of Wyoming, and the Bureau of Reclamation.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

REGION Pacific Nortwest	PROJECT - Yakima River Basin Water Enhancement Project		STATE Washington
INITIATION FY 1981	COMPLETION FY 1986	PERCENTAGE COST SHARING 14	TYPE OF STUDY Project Investigation

Summarized Financial Data

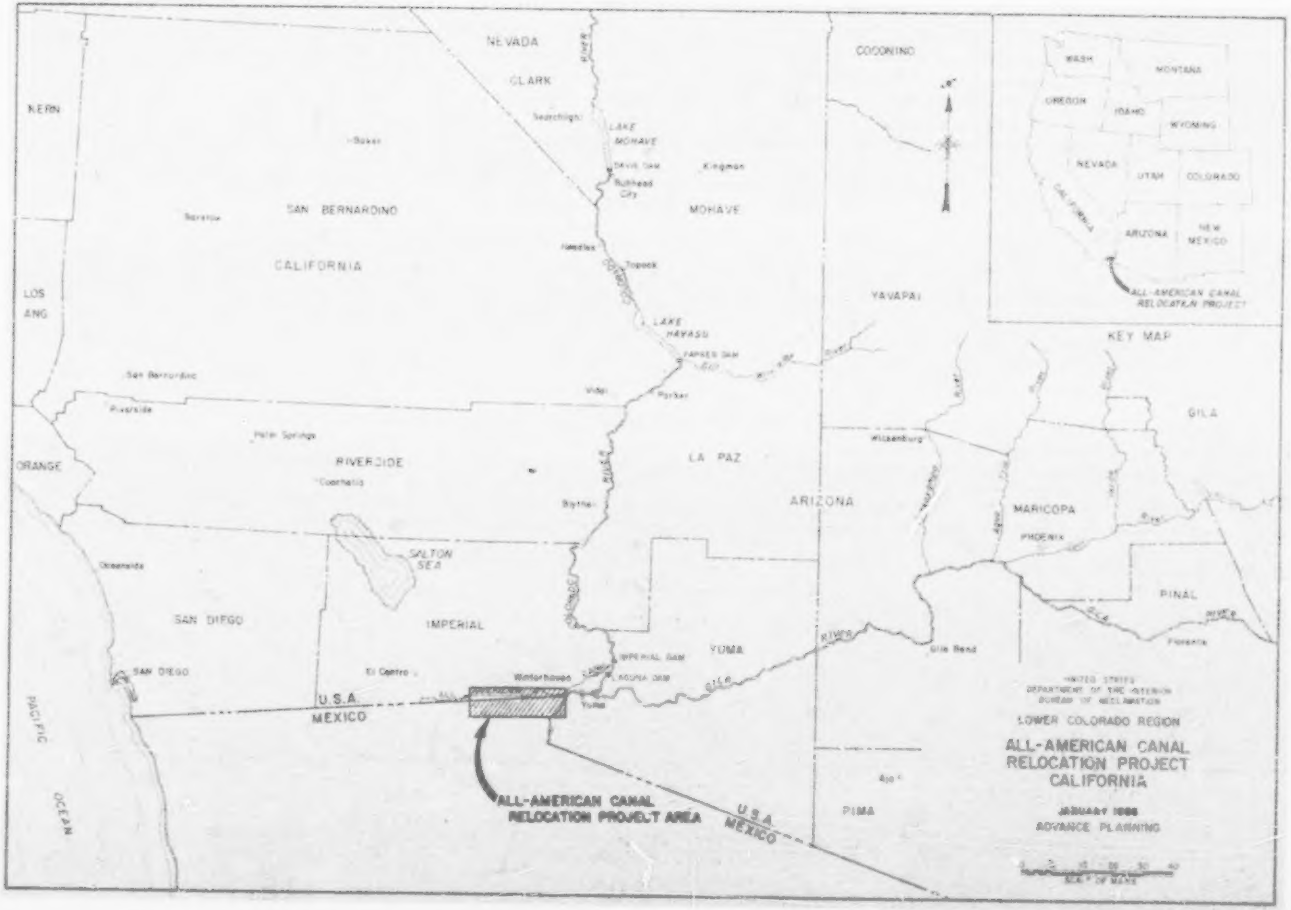
	Estimated Total	Total to September 30 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation	$3,313,934	$3,033,663	$280,271	$ -	$ -
Non-Federal:	650,000	500,000	150,000	-	-
Other Federal:					
Total	$3,963,934	$3,533,663	$430,271	$ -	$ -

Description of Study

The Yakima River basin is located in Yakima, Kittitas, and Benton Counties in south-central Washington. The Federal Yakima Project and the Yakima Indian Reservation are located in the basin. Existing Yakima Project facilities include six storage reservoirs with a total storage capacity of over 1 million acre-feet.

The objective of the study is to evaluate the viability of implementation measures that would increase water supply availability in the basin. The State and the Yakima Indian Nation are cooperating in the comprehensive study program and believe that it is crucial that water-related problems of the Yakima River system be addressed on a comprehensive basis. Storage and nonstorage water supply measures could provide an additional water supply in the basin for new irrigation development on the Yakima Indian Reservation; supplemental water to lands in the basin presently irrigated; and enhancement of streamflow conditions for anadromous fish, water quality, and esthetics. In addition, there could be substantial benefits to flood control and hydroelectric generation. The State of Washington has contributed $650,000 toward study funding.

Phase 1 of the study was completed in fiscal year 1982. Public review of problems, needs, and resources has been completed. Recent efforts in Phase 2 have been directed at identification of a preferred plan; a plan formulation working document (PFWD) is scheduled for early 1986. PFWD, Study efforts will focus on detailed environmental, social, engineering, and economic evaluation of alternatives for the purpose of identifying a preferred plan. The project has potential for upfront non-federal construction funding.


NEVADA
CLARK
KERN
LOS ANG
ORANGE
SAN BERNARDINO
CALIFORNIA
RIVERSIDE
SAN DIEGO
IMPERIAL
SALTON SEA
PACIFIC OCEAN
Baker
Barstow
Searchlight
LAKE MOHAVE
DAVIS DAM
Bullhead City
Kingman
MOHAVE
Needles
Topock
LAKE HAVASU
PARKER DAM
Vidal
Parker
San Bernardino
Riverside
Palm Springs
Coachella
Blythe
Oceanside
San Diego
El Centro
Winterhaven
IMPERIAL DAM
LAGUNA DAM
Yuma
COLORADO RIVER
BILL WILLIAMS RIVER
GILA RIVER
LA PAZ
YUMA
ARIZONA
COCONINO
YAVAPAI
Wickenburg
MARICOPA
PHOENIX
GILA
PINAL
Florence
Gila Bend
Ajo
PIMA
U.S.A.
MEXICO
ALL-AMERICAN CANAL RELOCATION PROJECT AREA
WASH
MONTANA
OREGON
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO
ALL-AMERICAN CANAL RELOCATION PROJECT
KEY MAP
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
ALL-AMERICAN CANAL RELOCATION PROJECT CALIFORNIA
ADVANCE PLANNING
0 5 10 20 30 40
SCALE OF MILES

Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

REGION Lower Colorado	All-American Canal Relocation, California		**PREPARATION DATE** January 1, 1986
ADVANCE PLANNING SCHEDULE	**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**	
INITIATION FY 1986 **COMPLETION** September 1987	September 1987	**DIRECT** Estimated to be 1.3:1 1/	**DATE** January 1985

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	FY 1987	Balance
Reclamation:	$930,000	--	$300,000	$630,000	
Other Federal:					
Non-Federal:					
o committed o tentative					
TOTALS	$930,000	--	$300,000	$630,000	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS

Irrigation
Power
M&I Water
Recreation 2/
F& WL
Flood Control
Hwy. Impr.
Other
TOTAL $144,000,000 3/

REPAYMENT

By Irrigators
By Power
By M&I Water
By Ad Valorem 2/
By Others
Nonreimbursable
TOTAL $144,000,000 3/

AMOUNTS PER ACRE

Irrig. Invest.
Repayment of Investment
By Irrigators
By Power Revenues
By M&I Water Users

Payment Capacity
Annual Charges:
O&M
Construction

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - P.L. 98-63 July 30, 1983 - Requires construction authorization

STATUS OF LAND CERTIFICATION: Not Required.

ESTIMATED CONSTRUCTION COST: $143,070,000

STATUS OF NEPA COMPLIANCE: Delayed Pending Negotiations with IID.

PROJECTED/XXXXXX DATE:

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The project is located on the All-American Canal west of Yuma, Arizona, beginning south of Pilot Knob and extending west to Drop No. 4.

The prime alternative under consideration is a new lined canal to be built adjacent and parallel to the existing alinement. This alternative would provide opportunity to make beneficial use of the water currently being lost to the system through seepage. It is estimated that nearly 87,000 acre-feet per year can be saved by lining this 30-mile portion of the canal. Since the Imperial Irrigation District and the Coachella Valley Water District irrigate year round, the canal cannot be shut down for any length of time. The plan is to build a new concrete-lined canal next to the present alinement. Tie-in to the existing canal at drop structures and highway crossings would permit use of these facilities in the new canal.

JUSTIFICATION: This alternative would provide an opportunity to make beneficial use of the seepage water. Twenty-eight thousand acre-feet of the water conserved each year could be used as the replacement source for the Yuma Desalting Plant reject stream in meeting the requirements specified by Public Law 93-320. Through the resolution of existing institutional impediments and the formulation of water exchange agreements, the remaining water could be made available to meet anticipated municipal and industrial water needs in southern California. The Imperial Irrigation District and the Metropolitan Water District have expressed interest in these areas and in exploring the possibilities of cost sharing. Estimated capital cost of construction using January 1985 prices is $144,000,000 for canal lining. Unit cost of the conserved water is about $260 per acre-foot, including interest during construction and pumping cost to the Los Angeles metropolitan area. An alternative water supply would be construction of new facilities for the California State Water Project at unit cost of at least $328 per acre-foot. Construction costs will be reimbursed by the water users.

Footnotes:

1/ Changed from 1:7:1 due to refinement of estimate of available water savings from 94,000 acre-feet to 87,000 acre-feet annually.

2/ Identification of specific uses of conserved water has not been finalized. Both Imperial Irrigation District and the Metropolitan Water District of Southern California have expressed interest in using the water for municipal and industrial purposes. There is also a Federal requirment for replacing the Yuma Desalting Plant reject stream, where the water could be used to meet the Federal obligation to Mexico.

3/ Includes reimbursable interest during construction of $14,000,000, based on 8-3/8 percent interest and 1985 price levels.

Explanation of changes in allocation from FY 1986 Budget Justifications

FY 1986 Estimate	FY 1987 Estimate
$144,930,000	$144,000,000

Decrease of $930,000 reflects reduced estimate of acre-feet saved from 94,000 to 87,000 acre-feet annually.

7-2144.3 (7-83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Upper Colorado	PROJECT AND STATE CRWQIP - Big Sandy River Unit, Wyoming		PREPARATION DATE January 1, 1986
ADVANCE PLANNING SCHEDULE	PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION	BENEFIT/COST RATIO	
INITIATION October 1986	COMPLETION September 1986	DIRECT 1/	DATE October 1, 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of	FY 1986	FY 1987	Balance
Reclamation:	$ 75,000		$ 75,000	$ ---	
Other Federal:					
Non-Federal:					
○ committed ○ tentative					
TOTALS	$ 75,000		$ 75,000	$ ---	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS

Irrigation
Power
M&I Water
Recreation
F& WL
Flood Control
Hwy. Impr.
Other (Salinity Control) 1/
TOTAL

REPAYMENT

By Irrigators
By Power
By M&I Water
By Ad Valorem
By Others 1/ 2/
Nonreimbursable
TOTAL

AMOUNTS PER ACRE

Irrig. Invest.
Repayment of Investment
By Irrigators
By Power Revenues
By M&I Water Users

Payment Capacity
Annual Charges:
O&M
Construction

STATUS: The preferred plan is being revised; therefore, construction cost is unknown. Advance Planning will be concluded at the end of FY 1986.

STATUS OF AUTHORITY: Feasibility Authority - Public Law 93-320 June 24, 1974, Public Law 96-375 - October 3, 1980

ESTIMATED CONSTRUCTION COST: Unknown

STATUS OF LAND CERTIFICATION: Not required.

STATUS OF NEPA COMPLIANCE:
PROJECTED/ACTUAL DATE: Date undetermined.

GPO 842-140

7-2144B (7-83)
Bureau of Reclamation

CRWQIP - Big Sandy River Unit, Wyoming - 2

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Recla

DESCRIPTION OF POTENTIAL PROJECT: The purpose of this project is to control salinity of the Colorado River at or below 1972 levels as measured at three locations on the river.

Big Sandy River contributes 164,000 tons per year of salts to the Colorado River which increases salinity at Imperial Dam by 16.6 mg/L. The primary source of salt loading has been found to be the Eden Project. Saline water would be collected through wells near the river and pumped via pipeline to industries in southwest Wyoming. Wyoming has contributed to the plan formulation portion of the investigation. All Colorado River Basin States support the study.

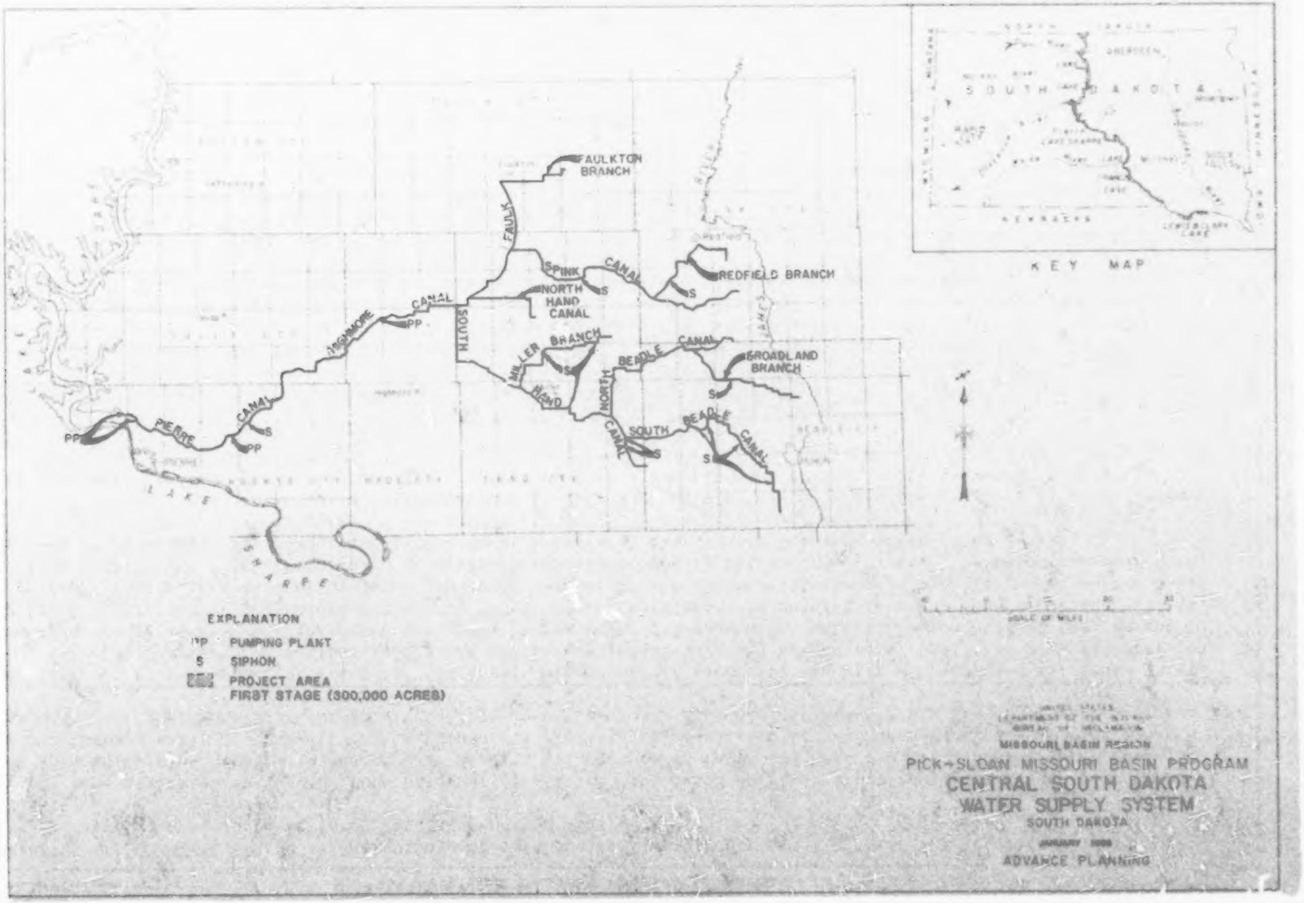
JUSTIFICATION: Salinity concentrations in the lower Colorado River fluctuate annually with the overall Basin Water supply, often are approaching serious levels for municipal, industrial, and agricultural use. The high salinity concentrations result in economic losses to the users of the lower Colorado River waters. About half of the present salinity concentration in the Colorado River at Hoover Dam is attributed to natural sources. The remaining half is man-induced. The construction of projects presently authorized and planned private developments on the entire basin will cause significant further increases in salinity concentrations in the Colorado River. The needs are near term. Mexico has complained of the damage the saline water is causing the Mexican Colorado River water users.

Big Sandy River Unit plan formulation investigations to date have identified the preferred plan but it is no longer viable. Advance Planning activities are necessary to develop a new plan and predict costs and effects accurately.

Footnotes:

1/ Previous agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications. The cost effectiveness of the unit is measured in terms of annual cost for each ton of salt removed in the Colorado River at Imperial Dam. The preferred plan is being revised; therefore, figures are not available.

2/ Public Law 98-569 provides that 70 percent of the costs will be nonreimbursable. The other 30 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, and availability of revenues, provided that costs allocated to the upper basin shall not exceed 15 percent of the costs allocated to the upper and lower basin funds.


FAULKTON BRANCH
FAULK
SPINK CANAL
REDFIELD BRANCH
NORTH HAND CANAL
HIGHMORE CANAL
SOUTH
MILLER BRANCH
HAND
NORTH CANAL
BEADLE CANAL
BROADLAND BRANCH
SOUTH BEADLE CANAL
PIERRE CANAL
PP
S
LAKE SHARPE
LAKE
KEY MAP
SOUTH DAKOTA
NEBRASKA
SCALE OF MILES
EXPLANATION
PP PUMPING PLANT
S SIPHON
▨ PROJECT AREA FIRST STAGE (300,000 ACRES)
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
PICK-SLOAN MISSOURI BASIN PROGRAM
CENTRAL SOUTH DAKOTA WATER SUPPLY SYSTEM
SOUTH DAKOTA
JANUARY [illegible]
ADVANCE PLANNING

7 2144A (7 83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Missouri Basin	**PROJECT AND STATE** Pick-Sloan Missouri Basin Program, Central South Dakota Water Supply System, South Dakota		**PREPARATION DATE** January 1, 1986

ADVANCE PLANNING SCHEDULE		**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**	
INITIATION	**COMPLETION**		**DIRECT**	**DATE**
FY 1986	FY 1987	September 1989	1/ 1.2	October 1, 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	FY 1987	Balance
Reclamation:	$1,975,000	$ --	$1,775,000	$ 200,000	$ -0-
Other Federal:					
Non-Federal: 5/	400,000		300,000	100,000	-0-
o committed o tentative					
9/ TOTALS:	$2,375,000	$ --	$2,075,000	$ 300,000	$ -0-

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS 2/		REPAYMENT	
Irrigation	$731,575,000	By Irrigators 7/	$731,575,000
Power	0	By Power	44,402,000
M&I Water	4,995,000	By M&I Water	4,995,000
Recreation		By Ad Valorem	
F& WL 3/		By Others	
Flood Control 3/			
Hwy. Impr. 3/			
Other 4/	3,690,000	Nonreimbursable 4/	3,690,000
TOTAL	$740,260,000 10/	TOTAL	$822,243,000 10/

AMOUNTS PER ACRE

Irrig. Invest.	$2,439	Payment Capacity	$156.40
Repayment of Investment			
By Irrigators	2,439	Annual Charges:	
By Power Revenues		O&M	
By M&I Water Users	0	Construction	25.50 114.00
		Assessment for Drains & Onfarm Mitigation	16.90 7/
			$156.40 8/

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - Public Law 97-273 - September 30, 1982	**ESTIMATED CONSTRUCTION COST:** $622,684,243 6/
STATUS OF LAND CERTIFICATION: Scheduled for completion in September 1988.	**STATUS OF NEPA COMPLIANCE: PROJECTED/ACTUAL DATE:** Draft - 1985 Final - 1986

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The Central South Dakota Water Supply System is a proposal to divert water from the Missouri River to serve an area of approximately 300,000 acres in Hughes, Hyde, Hand, Faulk, Spink, and Beadle Counties of central South Dakota for M&I opportunities in the project area. The Oahe Pumping Plant would pump water from the Oahe Reservoir on the Missouri River near Pierre, and a system of canals, laterals, and pipeline would extend eastward to the vicinity of the city of Huron. The main features of the plan include the partially completed Oahe Pumping Plant and Pierre Canal and a portion of the proposed Highmore Canal, all part of the partially completed Oahe Project.

JUSTIFICATION: The economic base of the project area consists primarily of dryland farming and ranching. Varying weather conditions from year to year greatly influence the level of agricultural production in the area which in turn causes reduced livestock feed production, thereby reducing the incomes of farmers and ranchers. Because business activity is dependent upon agriculture, the business people also suffer during drought years. The limited and widely fluctuating income could be stabilized through irrigation.

The State of South Dakota and project sponsors have been actively participating in the study with the Bureau of Reclamation.

The P-S MBP was developed and authorized by Congress as a four-function program: flood control, hydropower, navigation, and irrigation. The fourth commitment of irrigation due to the loss of 500,000 acres to the main stem dams and reservoirs has not been fulfilled.

Footnotes:

1/ Benefit-cost ratio based on discount rate of 8-3/8 percent and October 1986 price levels.

2/ Includes $49,443,000 interest-free pumping investment and $27,437,000 interest-free main stem storage assignment for irrigation associated with P-S MBP, $34,016,000 for previous expenditures in Oahe facilities, and $3,740,000 for federal and non-federal preauthorization investigation costs, but excludes $221,900,000 for subsurface drains and mitigation to be provided by project sponsors.

3/ The benefits to these functions have not been fully determined; therefore, allocation of joint costs is not possible at this time.

4/ Includes $400,000 as the estimated amount required for cultural resource activities which is nonreimbursable under Public Law 93-219, $2,660,000 for nonreimbursable federal preauthorization investigation estimated costs and $630,000 in estimated non-federal preauthorization planning costs.

Footnotes (Cont.):

5/ Services will contributed by the project sponsors. Estimated dollar value of these services is $400,000. The value of these services is estimated as: FY 1986 - $300,000; and FY 1987 - $100,000.

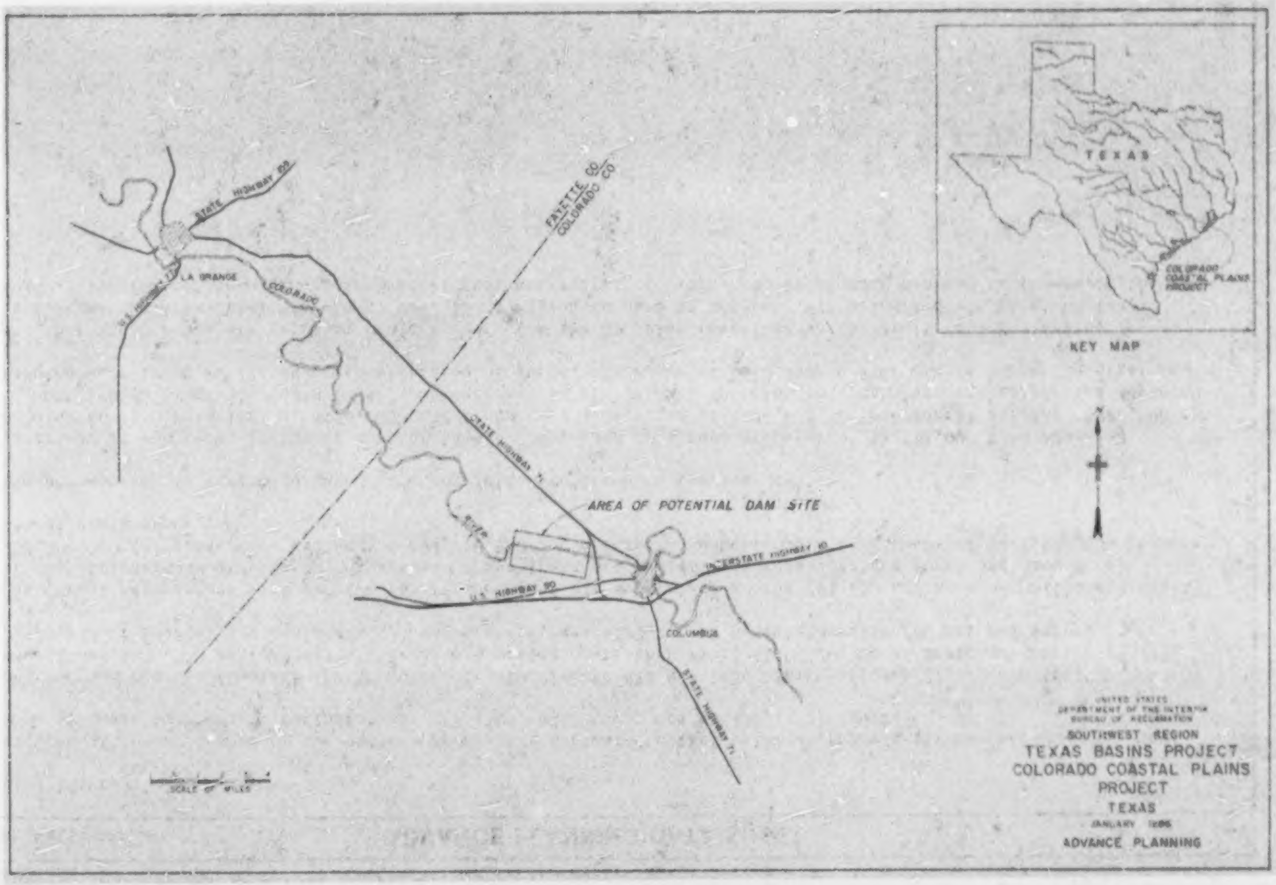
6/ Construction cost to complete the 300,000 acre NED Plan is 622,684,243. This excludes $2,375,000 ($1,975,000 federal and $400,000 nonfederal) of advanced planning costs thru FY87, $110,896,000 of assigned costs (see 2/), $3,414,757 of federal and nonfederal planning costs, and $590,000 of nonreimbursable IDC for M&I water.

7/ This annual assesstment will provide for financing of all subsurface drains ($11.50 per acre annually) and nearly all the mitigation costs ($5.50 per acre). These items are generally federal project costs and amount to $179,000,000 for subsurface drains and $42,900,000 for mitigation costs. This is a total of $221,900,000 in nonfederal assistance.

8/ Payment capacity is estimated based on crop yields projected to the year 1995.

9/ A decrease in the total estimated cost of $4,626,000 is due to a fund transfer of $1,536,000 from Advanced Planning to Plan Formulation, $150,000 underfinancing, a decrease of $400,000 for nonfederal funding, $280,000 to the E&RC (PRESS Program), and a $1,960,000 decrease in FY87 from a decision to accomplish the balance of Advanced Planning activities utilizing preconstruction of funds. Decrease of $300,000 in FY87 due to budget constraints.

10/ Note that these costs are based on project costs for the NED Plan contained in the draft CENDAK Planning Report/Draft Environmental Statement, Nov. 15, 1985, as indexed to October 1986 using indices obtained from UM-200. The indices resulted in an overall cost multiplied of 1.086. Benefits were assumed to change in the same ratio.


STATE HIGHWAY 159
FAYETTE CO.
COLORADO CO.
U.S. HIGHWAY 77
LA GRANGE
COLORADO
STATE HIGHWAY 71
RIVER
AREA OF POTENTIAL DAM SITE
INTERSTATE HIGHWAY 10
U.S. HIGHWAY 90
COLUMBUS
STATE HIGHWAY 71
SCALE OF MILES
TEXAS
COLORADO COASTAL PLAINS PROJECT
KEY MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHWEST REGION
TEXAS BASINS PROJECT
COLORADO COASTAL PLAINS
PROJECT
TEXAS
JANUARY [illegible]
ADVANCE PLANNING

7 2144A (7 83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Southwest	**PROJECT AND STATE** Colorado Coastal Plains Project, Texas	**PREPARATION DATE** January 17, 1986

ADVANCE PLANNING SCHEDULE		**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**	
INITIATION January 1985	**COMPLETION** September 1986		**DIRECT** 1/ 1.01	**DATE** April 1985 Price Base

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	Balance
Reclamation: 2/	$1,189,750	$587,624	$602,126	
Other Federal:				
Non-Federal (in-kind services)	260,000	100,000	160,000	
○ committed ○ tentative				
TOTALS	$1,449,750	$687,624	$762,126	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS		REPAYMENT 3/		AMOUNTS PER ACRE	
Irrigation		By Irrigators		Irrig. Invest.	Payment Capacity
Power		By Power		Repayment of Investment	
M&I Water	239,165,000	By M&I Water	239,165,000	By Irrigators	Annual Charges:
Recreation	22,140,000	By Ad Valorem Recreation	11,165,000	By Power Revenues	O&M
F& WL	14,848,000	By Others F & WL	3,863,000	By M&I Water Users	Construction
Flood Control					
Hwy. Impr.	336,000				
Other 4/	2,500,000	Nonreimbursable 5/	24,796,000		
TOTAL	$278,989,000	TOTAL	278,989,000		

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - Public Law 89-561 - September 7, 1966	**ESTIMATED CONSTRUCTION COST:** $234,083,000 6/
STATUS OF LAND CERTIFICATION: Not required.	**STATUS OF NEPA COMPLIANCE:** **PROJECTED/ACTUAL DATE:**

GPO 842 - 140

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The primary project purpose is to provide a dependable M&I (municipal and industrial) water supply for industrial expansion and urban growth projected to take place in the Lower Colorado River Basin coastal counties. The project would consist of a new dam and reservoir that would provide for the M&I water supply and also for fish and wildlife, recreation, and environmental quality. The project site will be located between the communities of Columbus and La Grange, Texas, and potentially increase the Lower Colorado River Authority's system yield by approximately 122,000 acre-feet a year.

JUSTIFICATION: A Preliminary Findings Report prepared in June 1983 verified that an additional water supply will be needed by mid-1990's and that a supply could be developed by constructing a dam and reservoir on the Colorado River between La Grange and Columbus, Texas. Ongoing planning activities scheduled for completion by mid-fiscal year 1985 include completion of the plan formulation activities of the preferred plan and preparation of the Planning Report/Draft Environmental Statement.

Lower Colorado River Authority and Texas Department of Water Resources will provide in-kind services, such as staff time, equipment, data, etc.

Footnotes:

1/ B/C Ratio based on discount rate of 8.625 percent

2/ Initial cost based on preliminary estimates made during plan formulation. Upon completion of Stage I Planning, the advance Planning cost estimate has been refined.

3/ Allocation based on preliminary costs and analysis for the Planning Report on Shaws Bend damsite. IDC calculated at 10.898 percent. IDC excluded for nonreimbursable construction costs.

4/ Included $2,500,000 for nonreimbursable cultural resources activities (Public Law 93-291).

5/ Includes $10,975,000 for nonreimbursable recreation, $10,985 for nonreimbursable fish and wildlife, $2,500,000 for nonreimbursable cultural resources activities (Public Law 93-291), and $366,000 for nonreimbursable highway improvement. IDC excluded for nonreimbursable construction costs.

6/ Preliminary estimate from the Planning Report on the Shaws Bend damsite. Difference between this and $278,989,000 reflects reimbursable IDC.

ADVANCE PLANNING DATA SHEET

There has been a change in status of the Colorado Coastal Plains Advance Planning work due to lack of consensus of the sponsoring entity for the preferred plan: Shaws Bend. On September 19, 1985 the Board of Directors of the Lower Colorado River Authority (LCRA) voted 7-5 against supporting selection of the Shaws Bend dam and reservoir as the preferred plan. We advised the LCRA that extensive studies had been done which was supported by LCRA who, in fact, specifically expressed their preference for the Shaws Bend dam and reservoir over the less desirable alternatives. We advised LCRA that we were suspending work on the project. However, if they were to reconsider their decision and provide strong support for the Shaws Bend alternative as the preferred plan in the near future, we would continue Advance Planning activities.

Since then, the Board indicated a willingness to again place the issue on the agenda for discussion if at least 8 of the 15 Board members agreed. To date, no further action has been taken by the Board on this issue.

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Upper Colorado	CRWQIP - Dirty Devil River Unit, Utah	**PREPARATION DATE** January 1, 1986

ADVANCE PLANNING SCHEDULE

INITIATION October 1986	**COMPLETION** September 1989	**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION** September 1989	**BENEFIT/COST RATIO** **DIRECT** 1/ $102	**DATE** October 1, 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to Date as of 9/30/85	FY 1987		Balance
Reclamation:	$950,000	$ ---	$165,000		$785,000
Other Federal:					
Non-Federal:					
○ committed ○ tentative					
TOTALS	$950,000	$ ---	$165,000		$785,000

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS		REPAYMENT	
Irrigation		By Irrigators	
Power		By Power	
M&I Water		By M&I Water	
Recreation		By Ad Valorem	
F& WL		By Others	
Flood Control		Lower Basin 2/	$4,526,000
Hwy. Impr.		Upper Basin	799,000
Other (Salinity Control)	$17,749,000	Nonreimbursable	12,424,000
TOTAL	$17,749,000	**TOTAL**	$17,749,000

AMOUNTS PER ACRE

Irrig. Invest.	Payment Capacity
Repayment of Investment	
By Irrigators	Annual Charges:
By Power Revenues	O&M
By M&I Water Users	Construction

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - Public Law 93-320 June 24, 1974, Public Law 96-375 - October 3, 1980

ESTIMATED CONSTRUCTION COST: $16,799,000

STATUS OF LAND CERTIFICATION: Not required

STATUS OF NEPA COMPLIANCE:

PROJECTED/~~ACTUAL DATE~~: NEPA compliance scheduled 9/86

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The potential project would help control salinity of the Colorado River at or below 1972 levels as measured at three locations on the river.

The Dirty Devil River Unit's preferred plan would reduce salt loading to the Colorado River by about 20,900 tons per year, resulting in an annual benefit at Imperial Dam of 1.9 mg/L. The plan involves collecting saline spring water, which presently enters fresher surface water, and disposing of it through deep well injection.

JUSTIFICATION: Salinity concentrations in the Lower Colorado River fluctuate annually with the overall Basin Water supply, often projected to reach serious levels for municipal, industrial, and agricultural use and would result in economic losses to the users of the Lower Colorado River waters. About half of the present salinity concentration in the Colorado River at Hoover Dam is attributed to natural sources. The remaining half is man-induced. The construction of projects presently authorized and planned private developments on the entire basin will cause significant further increases in salinity concentrations in the Colorado River. Mexico has complained in the past of the damage that saline water causes the Mexican Colorado River water users.

Dirty Devil River investigations have identified the preferred plan which was described in a Plan Formulation Working Document dated February 1985. Cost effectiveness would be about $102 per ton based on January 1985 costs indexed to October 1986.

Footnotes:

1/ Previous agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications. The cost effectiveness of the unit is measured in terms of annual cost for each ton of salt removed. It is estimated that 20,900 tons of salt annually could be removed at a cost of $102 per ton. The salinity reduction at Imperial Dam would be 1.9 mg/L. This cost is based on October 1986 projected price levels. The interest rate for FY 1986 of 8.625 percent was used.

2/ Public Law 98-569 provides that 70 percent of the costs will be nonreimbursable. The other 30 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, and availability of revenues, provided that costs allocated to the Upper Basin shall not exceed 15 percent of the costs allocated to the Upper and Lower Basin funds.

7-2144A (7-83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Missouri Basin

PROJECT AND STATE Pick-Sloan Missouri Basin Program, Lake Andes-Wagner Unit, South Dakota

PREPARATION DATE December 1985

ADVANCE PLANNING SCHEDULE		PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION	BENEFIT/COST RATIO	
INITIATION	COMPLETION		DIRECT	DATE
October 1983	January 1986	January 1986	1/ 1.1	October 1, 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	FY 1987	Balance
Reclamation:	$ 498,144	$459,884	$ 38,260	—	
Other Federal:					
Non-Federal: 2/	168,000	168,000			
○ committed ○ tentative					
TOTALS	$ 666,144	$627,884	$ 38,260	—	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS 3/		REPAYMENT		AMOUNTS PER ACRE			
Irrigation	$182,879,000	By Irrigators	6/ $182,879,000	Irrig. Invest.	$4,064	Payment Capacity	$133.40
Power		By Power		Repayment of Investment			
M&I Water		By M&I Water	0	By Irrigators		Annual Charges:	
Recreation		By Ad Valorem	---	By Power Revenues	4,064	O&M	
F& WL		By Others	---	By M&I Water Users	0	Construction	26.00
Flood Control	346,000	7/	90,000		0		107.40
Hwy. Impr.							
Other 4/	1,682,000	Nonreimbursable 8/	1,938,000				
TOTAL	$184,907,000	TOTAL	$184,907,000 9/				

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - Public Law 92-577 - October 27, 1972

ESTIMATED CONSTRUCTION COST: To complete: $164,525,000 5/

STATUS OF LAND CERTIFICATION: Studies for certification completed.

STATUS OF NEPA COMPLIANCE: PROJECTED/ACTUAL DATE: Draft - February 1985
Final - September 1985

GPO 842-140

7-2144B (7-83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The project is located in southeastern South Dakota between the towns of Lake Andes and Wagner in Charles Mix County. The purpose of the project is to provide a water supply system to about 45,000 acres of irrigable land and fish and wildlife enhancement. The proposed plan consists of three main parts: (1) Lake Francis Case, an existing source of water supply and part of the Pick-Sloan Missouri Basin program, (2) an irrigation distribution system including a main canal and several pumping plants, and (3) a surface and subsurface drainage system. The plan proposes lifting water by pumping from Lake Francis Case to a main canal that will convey the water to the project area. The proposed distribution system is a combination of concrete-lined laterals and closed pipe sized for sprinkler irrigation.

JUSTIFICATION: The project will stabilize the agricultural economy of the area, especially during drought periods and will provide for a better quality of life in the area. Strong State support is evidenced by the State of South Dakota Water and Natural Resources Board endorsement and by selection as one of the state's top 10 water project priorities. Strong local support has been displayed in public meetings and by formation of the Lake Andes-Wagner Irrigation District which has contributed some $800,000 for a private consultant to conduct a preliminary study. In June 1983, a nonprofit organization, representing a smaller area, called the Lake Andes-Wagner Water System, Inc., was formed. This organization received a loan from the State of South Dakota to accelerate the planning activities. Reclamation coordinated this work to ensure that it will meet our criteria.

Footnotes:

1/ Based on 8-3/8 percent and October 1985 price levels. No change from FY85 Budget Justifications.

2/ The project sponsors have contributed $97,000 in cash and $71,000 in contracted services for advance planning for a total of $168,000.

3/ Explanation of changes in allocations from the FY85 Budget Justifications:

	FY 1986 estimate	FY 1987 estimate
Irrigation	$196,329,000	$ 182,879,000
Other	2,722,000	1,682,000
Fish & Wildlife	304,000	346,000
Total	$199,355,000	$ 184,907,000

The decrease of $14,488,000 is due primarily to a more detailed cost estimate.

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

4/ Includes $1,110,000 of Federal Preauthorization costs, $472,000 of nonfederal planning assistance, and $100,000 for cultural resource activities which is nonreimbursable under Public Law 93-291.

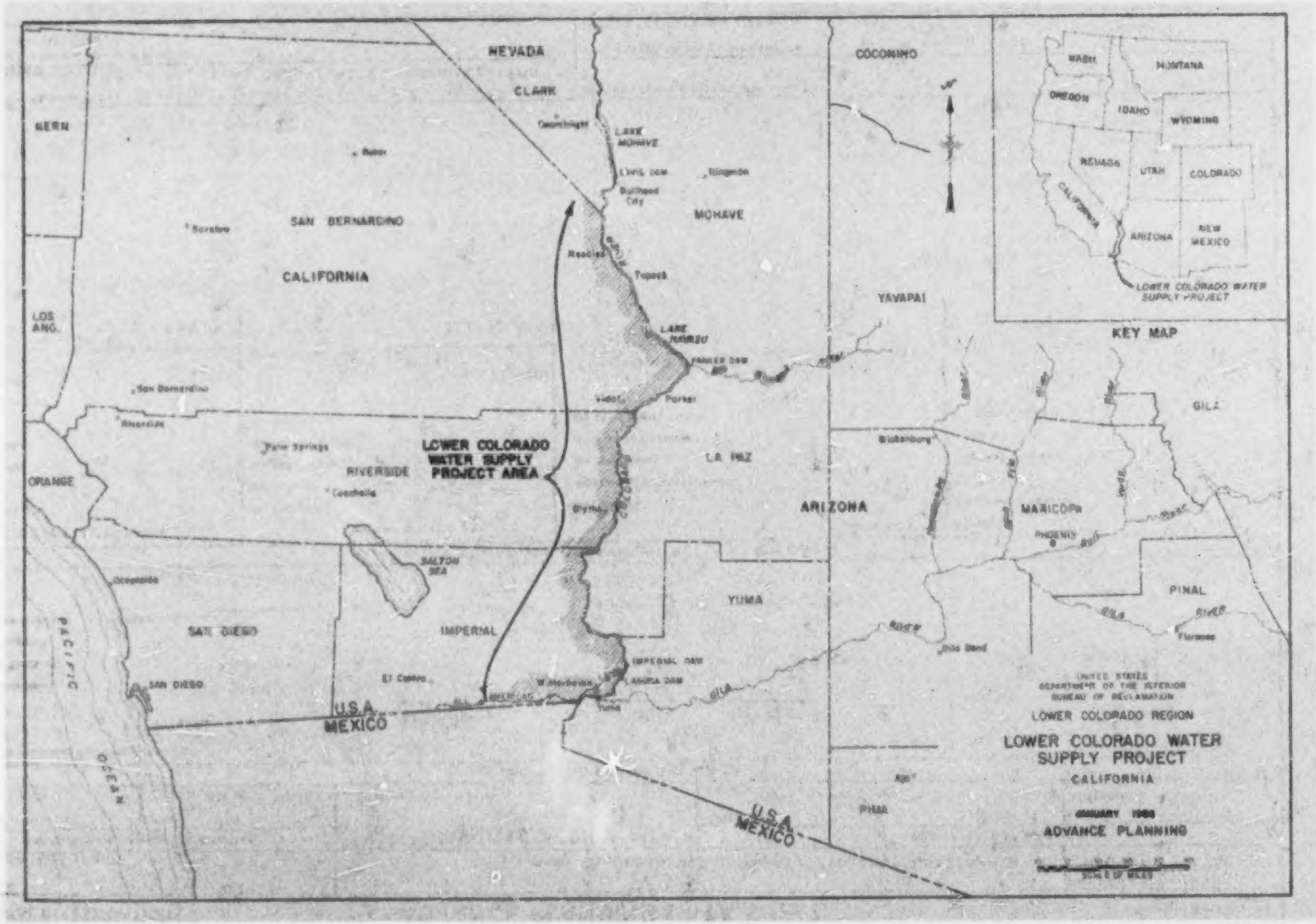
5/ Cost to complete after FY86 excludes $18,129,000 of assigned P-S MBP costs for storage and project pumping investment, $1,110,000 of Federal preauthorization costs, $472,000 of non-federal planning assistance, $498,144 of Federal advanced planning costs, $168,000 of non-federal advanced planning costs, and $5,000 of reimbursable interest during construction for fish and wildlife facilities.

6/ Includes $168,000 of non-federal advance planning costs provided by the project sponsors.

7/ Includes 85,000 (1/4 of enhancement facilities) of construction costs and $5,000 of reimbursable interest during construction at the FY84 rate of 10.403 percent.

8/ Includes all costs in footnote 4/ and $256,000 of fish and wildlife enhancement facilities.

9/ Note that total costs reflect an update to October, 1986 of the costs for the preferred plan as contained in the PR/FES, 9-12-85. Benefits were assumed to increase in the same ratio, so that the B/C ratio remains unchanged.


NEVADA
CLARK
Searchlight
LAKE MOHAVE
Davis Dam
Kingman
Bullhead City
MOHAVE
COCONINO
KERN
Baker
Barstow
SAN BERNARDINO
CALIFORNIA
Needles
Topock
LAKE HAVASU
PARKER DAM
YAVAPAI
LOS ANG.
San Bernardino
Riverside
Vidal
Parker
Palm Springs
RIVERSIDE
Coachella
LOWER COLORADO WATER SUPPLY PROJECT AREA
LA PAZ
ARIZONA
ORANGE
Blythe
Wickenburg
MARICOPA
PHOENIX
GILA
SALTON SEA
YUMA
PINAL
GILA RIVER
Florence
Oceanside
SAN DIEGO
IMPERIAL
PACIFIC OCEAN
El Centro
IMPERIAL DAM
LAGUNA DAM
Winterhaven
Yuma
Gila Bend
U.S.A.
MEXICO
PIMA
Ajo
WASH.
MONTANA
OREGON
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO
LOWER COLORADO WATER SUPPLY PROJECT
KEY MAP
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
LOWER COLORADO WATER SUPPLY PROJECT
CALIFORNIA
JANUARY
ADVANCE PLANNING
SCALE OF MILES

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Lower Colorado	Lower Colorado Water Supply Project, California	**PREPARATION DATE** January 1, 1986

ADVANCE PLANNING SCHEDULE		PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION	BENEFIT/COST RATIO	
INITIATION FY 1986	**COMPLETION** September 1986	August 1986	**DIRECT** 1/ 8.9:1	**DATE** January 1985

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	FY 1987	Balance
Reclamation:	$200,000		$200,000	$ ---	
Other Federal:					
Non-Federal:					
o committed o tentative					
TOTALS	$200,000		$200,000	$ ---	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS 4/		REPAYMENT	
Irrigation		By Irrigators	
Power		By Power	
M&I Water	2/ $ 464,000	By M&I Water	2/ $ 464,000
Recreation		By Ad Valorem	
F& WL		By Other	
Flood Control			
Hwy. Impr. 3/	232,000		3/ 232,000
Other		Nonreimbursable	
TOTAL	$ 696,000	TOTAL	$ 696,000

AMOUNTS PER ACRE

Irrig. Invest.		Payment Capacity	N/A
Repayment of Investment	N/A		
By Irrigators		Annual Charges:	
By Power Revenues		O&M	
By M&I Water Users		Construction	

STATUS:

STATUS OF AUTHORITY: Feasibility Authority - P.L. 96-375, October 3, 1980. Requires Construction Authorization

ESTIMATED CONSTRUCTION COST: $496,000

STATUS OF LAND CERTIFICATION: Not Required.

STATUS OF NEPA COMPLIANCE: FONSI March 1986

PROJECTED/~~ACTUAL DATE~~:

7-2144B (7-83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

Lower Colorado Water Supply Project

DESCRIPTION OF POTENTIAL PROJECT: The study area is located in southern California near the Colorado River in San Bernardino, Riverside, and Imperial Counties. Plan formulation activities which recommend alternative for a water supply for the noncontract water users along the Colorado River in the State of California, were completed in fiscal year 1985. The objective of the project is to have a water supply available when the Central Arizona Project becomes fully operational. Staged development of the water supply is a construction alternative. The initial phase of the most likely alternative would be located at the sand hills along the All-American Canal. It would consist of drilling 2 production wells and equipping them with pumps and motors, and constructing a pipeline to deliver approximately 3,000 gal/min to the All-American Canal. The cost of providing this water, including interest during construction, is estimated to average $37 per acre-foot for the first stage. Benefits of the project are estimated to be $328 an acre-foot providing economic justification. An exchange agreement would be necessary with the Imperial Irrigation District of the Coachella Valley Water District to allow diversion by project water users from the Colorado River. This initial development would provide approximately 40 percent of the projected water needs of the users who do not have contracted rights. Other project alternatives include securing water rights from retired irrigated land, or through water conservation measures. Advance planning activities will include drilling test wells, collection of design data, design refinement, cost estimates, and specifications writing. Allocated costs reflect the costs for the second stage. As future demand increases, additional wells will be constructed to provide up to 10,000 acre-feet of supply annually.

JUSTIFICATION: The lower Colorado Water Supply Project is essential to the economic stability of the communities along the Colorado River which do not have a permanent water supply. Communities such as the cities of Needles and Winterhaven, Califionia, and recreational areas managed by the Bureau of Land Management (BLM) will be forced to curtail their water use by more than 50 percent when the Central Arizona Project becomes fully operational. A firm water supply must be developed to avoid economic and social problems in this area which is largely dependent on Colorado River water. BLM and the city of Needles have contacted Federal and State Governments to encourage development of a firm water supply.

Preliminary data indicate that of the 4,000 acre-foot per year supply, about 33 percent would be for Federal recreational uses and 67 percent for non-Federal domestic uses.

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

Footnotes:

1/ Based on 8 3/8% discount rate. Benefit/cost ratio changed from 7.0:1 as presented in the FY 1986 Justification due to staged development of the project. Construction of the first stage is estimated to be $496,000, changed from $725,000 in the FY 1986 Justification for the entire project. Cost of providing the water including interest during construction is now estimated to be $37 per acre-foot changed from $51 per acre-feet. Benefits of the project are estimated to be $328 per acre-foot changed from $360 per acre-foot.

2/ Includes $32,216 in reimbursable interest during construction.

3/ Does not include nonreimbursable investigation costs. Reflect the 33 percent allocated share of project costs associated with providing water supply for Bureau of Land Managment recreation areas.

4/ Explanation of changes in allocation from FY 1985 Budget Justification:

	FY 1986 Estimate	FY 1987 Estimate
Municipal and Industrial Water	$1,085,000	$696,000

The decrease of $389,000 reflects a staged construction of facilities for providing the first 4,000 acre-feet of a potential 10,000 acre-feet per year supply. Full development of 10,000 acre-feet year would cost $1,718,000.

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Upper Colorado	CRWQIP - Lower Gunnison Basin Unit (Winter Water), Colorado	**PREPARATION DATE** January 1, 1986

ADVANCE PLANNING SCHEDULE		**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**	
INITIATION October 1983	**COMPLETION** September 1987	September 1987	**DIRECT** 1/	**DATE** October 1, 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of 9/30/85	FY 1986	FY 1987	Balance
Reclamation:	$1,562,799	$1,187,471	$275,328	$100,000	
Other Federal:					
Non-Federal:					
○committed ○ tentative					
TOTALS	$1,562,799	$1,187,471	$275,328	$100,000	

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS		REPAYMENT		AMOUNTS PER ACRE	
Irrigation		By Irrigators		Irrig. Invest.	Payment Capacity
Power		By Power		Repayment of Investment	
M&I Water		By M&I Water		By Irrigators	Annual Charges:
Recreation		By Ad Valorem 2/		By Power Revenues	O&M
F& WL		By Other Lower Basin	$5,307,000	By M&I Water Users	Construction
Flood Control		Upper Basin	937,000		
Hwy. Impr.		Nonreimbursable	14,568,000		
Other (Salinity Control)	$20,812,000				
TOTAL	$20,812,000	TOTAL	$20,812,000		

STATUS:

STATUS OF AUTHORITY: Feasibility - P.L. 93-320, 6/84	**ESTIMATED CONSTRUCTION COST:** $19,250,000
STATUS OF LAND CERTIFICATION: P.L. 96-375, Const. P.L. 98-569, 10/84	**STATUS OF NEPA COMPLIANCE:** **PROJECTED/~~ACTUAL DATE~~:** Filed with EPA January 4, 1983

CRWQIP - Lower Gunnison Basin Unit (Winter Water), Colorado - 2

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The potential project would help control salinity of the Colorado River at or below 1972 levels as measured at three locations on the river.

The Lower Gunnison Basin Unit winter water flows contribute 78,550 tons of salt annually to the river. The approved plan would reduce the salinity by the total 78,550 tons, resulting in an annual benefit at Imperial Dam of 8.0 mg/L. Water which runs through canals during nonirrigation season seeps from canals and picks up salt as it returns to the river. The plan would put winter livestock water in pipe for distribution. The Colorado River Basin Salinity Control Forum has approved the plan.

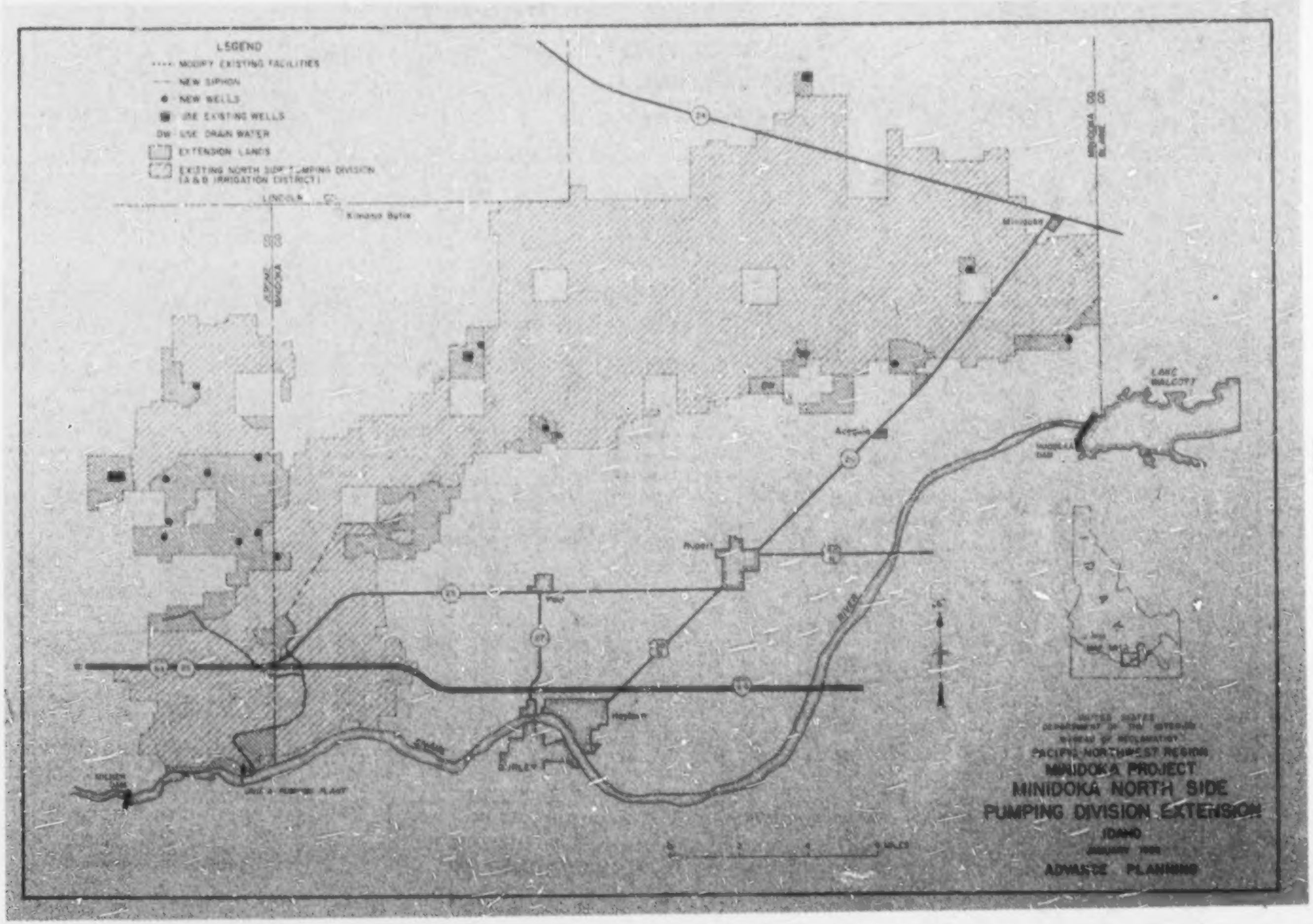
JUSTIFICATION: Salinity concentrations in the lower Colorado River fluctuate annually with the overall Basin water supply, often are approaching serious levels for municipal, industrial, and agricultural use. The high salinity concentrations result in economic losses to the users of the lower Colorado River waters. About half of the present salinity concentration in the Colorado River at Hoover Dam is attributed to natural sources. The remaining half is man-induced. The construction of projects presently authorized and planned private developments on the entire basin will cause significant further increases in salinity concentrations in the Colorado River. The needs are near term. Mexico has complained of the damage the saline water causing the Mexican Colorado River water users.

Lower Gunnison investigations to date have identified the preferred plan. Advance planning activities began on the winter water segment of the Lower Gunnison Basin Unit in FY 1984. Annual cost per mg/L of salinity reduction is $59,000 for the winter water segment.

Footnotes:

1/ Previous agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications. The cost effectiveness of the unit is measured in terms of annual cost for each ton of salt removed in the Colorado River at Imperial Dam. The annual removal of 78,550 tons of salt from the Colorado River by providing winter livestock water through the domestic system instead of through the canals and laterals results in a salinity reduction at Imperial Dam of 8.0 mg/L. The annual cost per ton of salinity reduction is $23.22. Current project costs are based on October 1986 projected price level. The interest rate for FY 1986 of 8.625 percent was used to calculate cost effectiveness. The project construction schedule has been extended from Oct. 1987 to Oct. 1989.

2/ Public Law 98-569 provides that 70 percent of the costs will be nonreimbursable. The other 30 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, and availability of revenues, provided that costs allocated to the upper basin shall not exceed 15 percent of the costs allocated to the upper and lower basin funds.


LEGEND
MODIFY EXISTING FACILITIES
NEW SIPHON
● NEW WELLS
■ USE EXISTING WELLS
DW USE DRAIN WATER
EXTENSION LANDS
EXISTING NORTH SIDE PUMPING DIVISION (A & B IRRIGATION DISTRICT)
LINCOLN CO.
Kimama Butte
Minidoka
Acequia
Rupert
Paul
Heyburn
Burley
LAKE WALCOTT
MINIDOKA DAM
SNAKE RIVER
UNIT A PUMPING PLANT
0 2 4 6 MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
MINIDOKA PROJECT
MINIDOKA NORTH SIDE
PUMPING DIVISION EXTENSION
IDAHO
JANUARY [illegible]
ADVANCE PLANNING

7-2144A (7-83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Pacific Northwest	**PROJECT AND STATE** Minidoka Project, North Side Pumping Division Extension, Idaho		**PREPARATION DATE** December 16, 1985
ADVANCE PLANNING SCHEDULE	**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**	
INITIATION FY 1986 / **COMPLETION** FY 1988	August 1987	**DIRECT** 1.23 1/	**DATE** October 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of	FY 1986	FY 1987	Balance
Reclamation	$ 760,000		$225,000	$160,000	$ 375,000
Other Federal					
Non Federal					
o committed o tentative					
TOTALS	$ 760,000		$225,000	$160,000	$ 375,000

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS		REPAYMENT		
Irrigation	$15,278,000	By Irrigators	3/	$15,278,000
Power		By Power		
M&I Water		By M&I Water		
Recreation	392,000	By Ad Valorem		
F & Wl		By Others		
Flood Control				98,000
Hwy Impr				
Other	2/ 570,000	Nonreimbursable	4/	864,000
TOTAL	$ 16,240,000	TOTAL		$ 16,240,000

AMOUNTS PER ACRE

Irrig. Invest.	$1,496	Payment Capacity	
Repayment of Investment			
By Irrigators	$1,496	Annual Charges:	66.30
By Power Revenues		O&M	
By M&I Water Users		Construction	
			26.00
			40.30

STATUS:

STATUS OF AUTHORITY: Feasibility Authority, P.L. 92-199	**ESTIMATED CONSTRUCTION COST:** $16,240,000
STATUS OF LAND CERTIFICATION: Estimated date not determined at this time.	**STATUS OF NEPA COMPLIANCE:** Draft EIS in progress **PROJECTED/ACTUAL DATE:** 4/86

GPO 842 - 149

DESCRIPTION OF POTENTIAL PROJECT: The potential Extension project is located in Jerome and Minidoka Counties in south-central Idaho. Feasibility studies were authorized by Public Law 92-199. A preferred plan for the North Side Pumping Division Extension was identified in the Plan Formultion Working Document of January 1984. The lands under study are the 13,410 acres of dryland located in a number of tracts within or adjacent to the A&B Irrigation District, the operating entity for Reclamation's existing North Side Pumping Division. These Federal lands are under Reclamation withdrawal. In addition, 3,750 acres of Bureau of Land Management lands in the vicinity are being considered for inclusion in the Extension plan in cooperation with that agency. Under the Recommended Plan, the Extension lands would be developed and managed to, in effect, complete the development of the North Side Pumping Division--a 77,000-acre Reclamation project. The plan would meet state and Federal objectives by preserving and enhancing wildlife habitat (5,590 acres) and by providing new irrigation development (9,400 acres). New irrigation development would be in the form of additions to existing small farm units. A part of each new farm tract would be managed for wildlife, and public hunting would be allowed on part of the new farmland. In addition, replacement water supplies would be provided to 810 acres of irrigated North Side Pumping Division lands which now have an unreliable water supply. Other resource needs are also being evaluated. The Project investigation is scheduled for completion in fiscal year 1986.

Advance planning work will include required preconstruction activities with emphasis on the refinement of Recommended Plan facilities and operations, particularly as they relate to the existing Reclamation project. Environmental compliance activities will be completed, including additional cultural resources studies and further cooperative activities with the state and Federal fish and wildlife agencies. Repayment negotiations will be conducted, and potential sources of upfront funding and other cost-sharing and financing will be confirmed.

JUSTIFICATION: The irrigation of some of the high quality Extension lands is needed to expand the economic base of the area. Since many of the existing farm units are small, the addition of a relatively small tract of Extension lands to those farms would create significant economic and social benefits. In some cases, the new lands would permit conversion of existing gravity irrigation systems to sprinkler methods. The proposed project would also provide surface water supplies to 810 acres of existing North Side Pumping Division lands which now have uncertain water supplies for which there are no economical alternatives under present conditions. Existing drain water would be used wherever possible to reduce the amount of water reaching the Snake Plain aquifer through existing injection wells.

Improved wildlife habitat is badly needed in the area, particularly for ring-necked pheasants. The Idaho Department of Fish and Game has stated that the project area once provided the best pheasant hunting in Idaho and some of the best hunting in the United States, but the pheasant resource has declined significantly, and it continues to decline. Critical habitat on the Extension lands should be protected and improved to enhance the wildlife resources throughout the entire area. Other potential uses must also be provided for since the Extension lands are the last public lands available in this area. The potential project, with its proposed cooperative approach to irrigation and wildlife enhancement, is actively supported by the A&B Irrigation District, the Idaho Department of Fish and Game, the Idaho Fish and Game Commission, the Idaho Department of Water Resources, water quality agencies, and other interests. Analysis indicates that the irrigators can repay all of the irrigation costs, and the Idaho Department of Fish and Game has stated its intent to cost-share on the wildlife enhancement measures. In addition, there is interest in substantial non-Federal upfront financing.

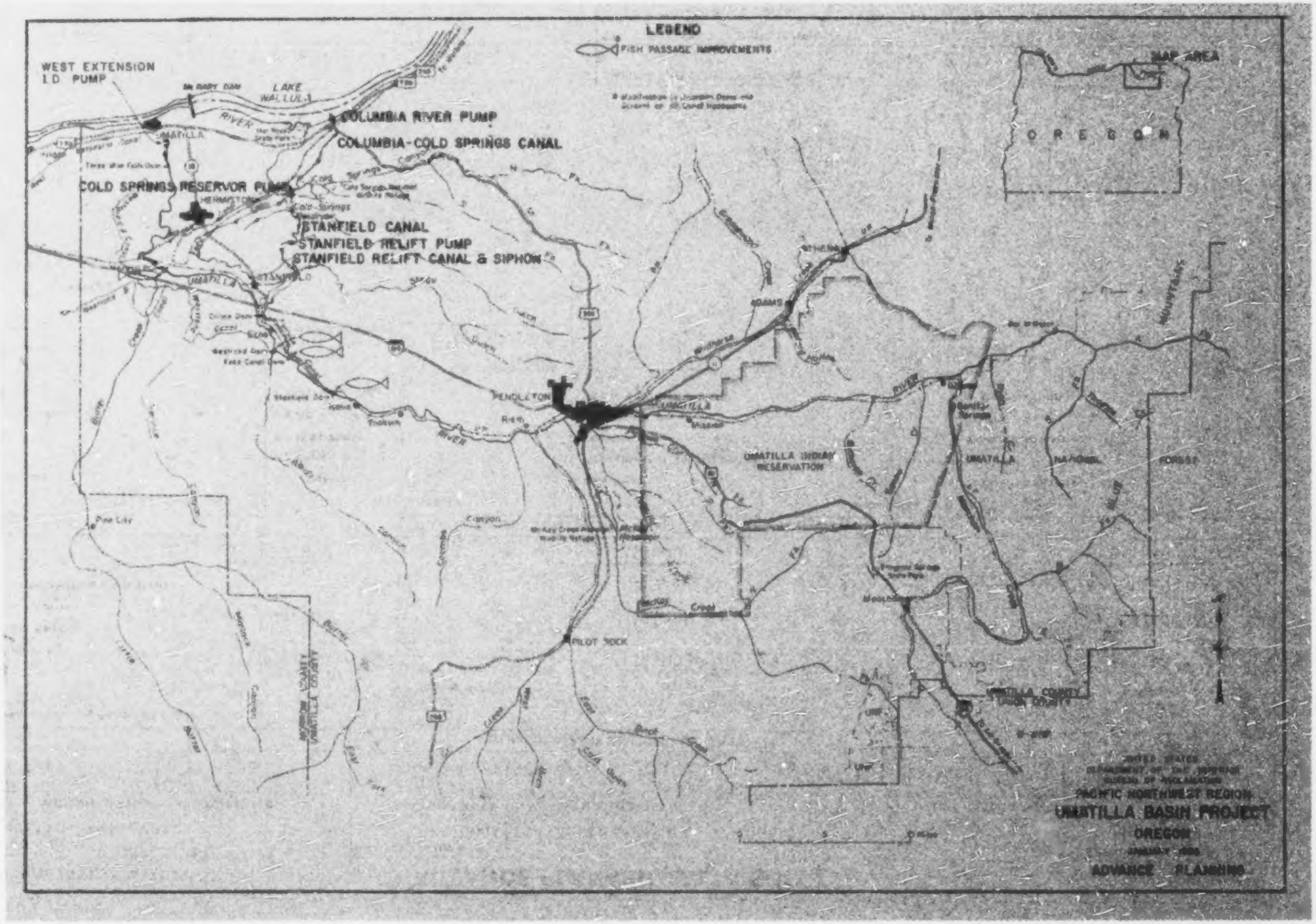
Footnotes:

1/ Based on "customized irrigation benefit" procedures. Analysis at 8-3/8 percent interest.

2/ Based on 10,210 acres served. Consist of $410,000 for preauthorization investigations and $160,000 for historical and archeological cost.

3/ Part of this will be paid up-front as a "construction assistance fee" by land owners.

4/ Consists of $410,000 for preauthorization investigations, $160,000 for historical and archeological cost plus $294,000 for the nonreimbursable share of fish and wildlife enhancement cost.


LEGEND
FISH PASSAGE IMPROVEMENTS
WEST EXTENSION I.D. PUMP
LAKE WALLULA
RIVER
UMATILLA
COLUMBIA RIVER PUMP
COLUMBIA-COLD SPRINGS CANAL
COLD SPRINGS RESERVOR PUMP
HERMISTON
Cold Springs
STANFIELD CANAL
STANFIELD RELIFT PUMP
STANFIELD RELIFT CANAL & SIPHON
STANFIELD
UMATILLA
PENDLETON
ATHENA
ADAMS
UMATILLA INDIAN RESERVATION
UMATILLA
NATIONAL
FOREST
PILOT ROCK
Pine City
UMATILLA COUNTY
UNION COUNTY
MAP AREA
O R E G O N
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
UMATILLA BASIN PROJECT
OREGON
ADVANCE PLANNING

? 2144A (7 83)
Bureau of Reclamation

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Pacific Northwest		**PROJECT AND STATE** Umatilla Basin Project, Oregon	**PREPARATION DATE** June 4, 1985
ADVANCE PLANNING SCHEDULE		**PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION**	**BENEFIT/COST RATIO**
INITIATION FY 1987	**COMPLETION** FY 1988	September 1988	**DIRECT** 1.7 to 1.0 1/
			DATE October 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of FY 1987	Balance
Reclamation:	$ 580,000	$134,000	$ 446,000
Other Federal:			
Non-Federal:	243,000	79,000	164,000
○ committed ○ tentative			
TOTALS	$ 823,000	$213,000	$ 610,000

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS		REPAYMENT		AMOUNTS PER ACRE	
Irrigation		By Irrigators		Irrig. Invest.	Payment Capacity
Power		By Power		Repayment of Investment	
M&I Water		By M&I Water		By Irrigators	Annual Charges:
Recreation		By Ad Valorem		By Power Revenues	O&M
F& WL	$37,000,000	By Others		By M&I Water Users	Construction
Flood Control			18,500,000		
Hwy. Impr.					
Other		Nonreimbursable	18,500,000		
TOTAL	$37,000,000	2/ TOTAL	$37,000,000		

STATUS:

STATUS OF AUTHORITY: Feasibility Authority, P.L. 89-561	**ESTIMATED CONSTRUCTION COST:** $37,000,000
STATUS OF LAND CERTIFICATION: Not Required.	**STATUS OF NEPA COMPLIANCE:** Draft EIS in progress **PROJECTED/ACTUAL DATE:**

GPO 842-140

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamat

DESCRIPTION OF POTENTIAL PROJECT: The preferred plan is a fishery enhancement plan to restore salmon runs and to enhance steelhead runs in the Umatilla River Basin in response to Indian treaty fishery objectives. The plan's major feature is that of improving streamflows by "importing" water from the neighboring Columbia River.

The Columbia River pumping feature includes a program wherein water would be pumped from the Columbia into existing Cold Springs Reservoir for distribution to irrigators. Use of this water by irrigators would permit Umatilla River water which is now diverted or stored for irrigation use to remain in the Umatilla River to improve flow conditions in the lower basin. Structural features include a major pumping plant on the Columbia River (Lake Walulla), two smaller pumping stations, and carriage facilities.

In addition to the Columbia River pumping features, the plan proposes improvements to fish passage facilities and installation of protective screens at some existing irrigation diversions. A significant plan feature is a post construction monitoring program which would "fine tune" flow improvements and other measures to maximize project effectiveness in meeting fishery enhancement objectives.

The water exchange program would provide a dependable water supply to the irrigation districts. The proposed operation would remove the threat of an Indian/non-Indian confrontation and possible litigation over the basin's water supply. Continuation of the irrigation water supply would help to stabilize the existing economy of the basin.

Advance planning work will focus on refining perferred plan facilities and operations, and on the collection of design data, further evaluation of designs and costs of the plan, completion of studies and activities related to environmental compliance and arrangements with the irrigation districts for the water exchange and use of facilities, and any other activities prerequisite to initiating construction.

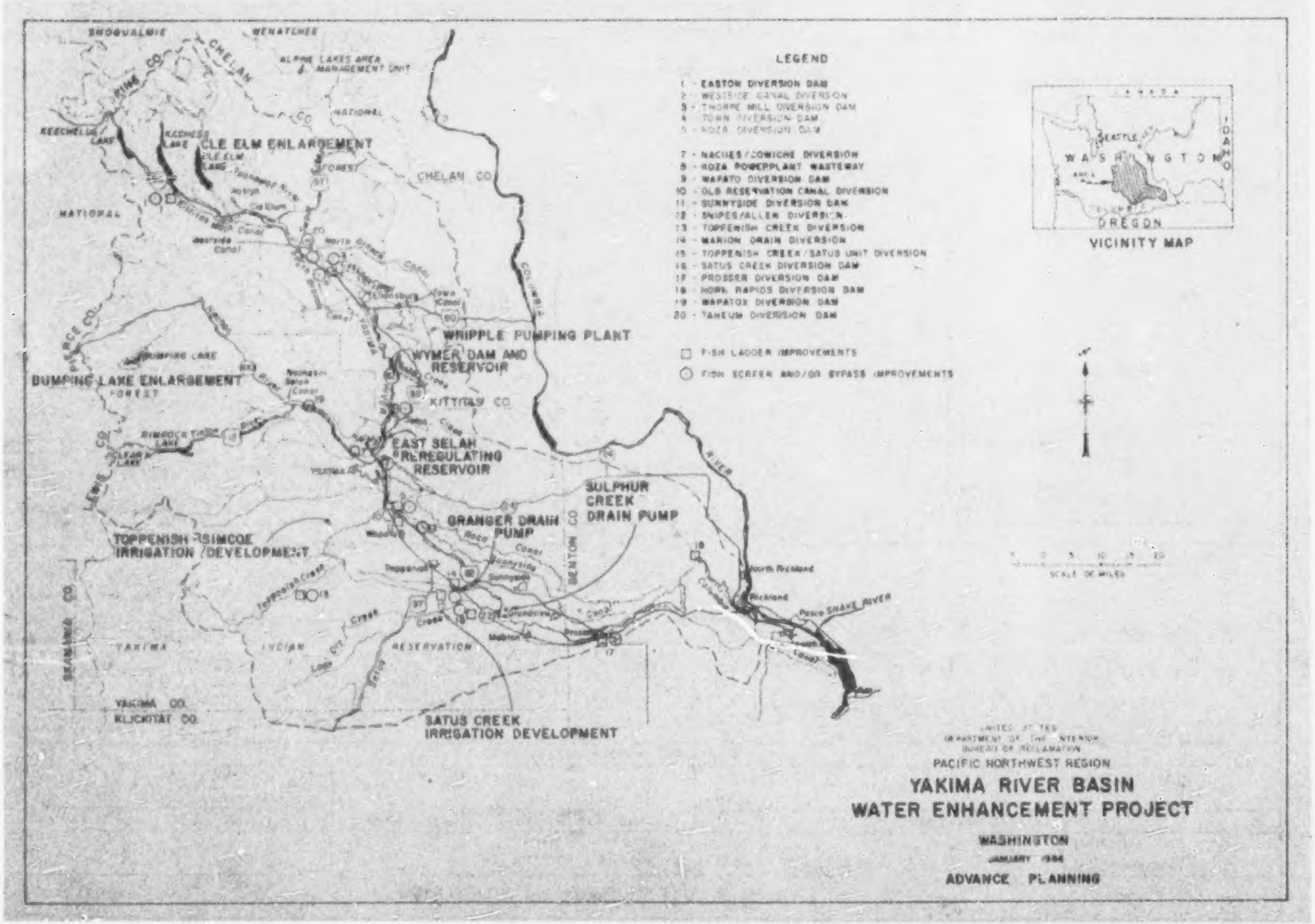
JUSTIFICATION: The Umatilla basin steelhead and salmon fishery has been weakened by the degradation of fisheries habitat. The commercial, sport, and Indian commercial and subsistence fisheries have suffered. The Confederated Tribes of the Umatilla Indian Reservation are seriously pursuing reestablishment of strong steelhead and salmon runs in the Umatilla basin. The tribes have a fisheries restoration program underway which is dependent upon securing an adequate water supply. A combination of structural and nonstructural solutions to insufficient flows and habitat degradation appears possible. Diversions from the Columbia River into the basin would enhance low summer streamflows, greatly increasing fish production. Reclamation has worked with Indian and non-Indian interests to arrive at an agreeable development plan which would allow fishery enhancement objectives to be reached and at the same time permit irrigation and other present water uses to continue. The failure to proceed with such a plan could result in water rights litigation which would be costly and disruptive to the basin community.

There is general agreement among Indian and non-Indian water interests that expedient Federal action is required to provide the water necessary to restore Umatilla River salmon and steelhead runs. Failure to take such action would almost certainly result in a major legal confrontation and social , economic, and political conflict between Indian and non-Indian residents. Further, the capability of the existing Federal Umatilla Reclamation project to meet its water supply commitments would be seriously affected should Federal court action require utilization of project water supplies to protect reserved treaty rights of the tribes.

Footnotes:

1/ Benefit/cost ratio computed at 8-3/8 percent interest.

2/ The administration is seeking 50% non-federal cost sharing for construction of this project. Purpose of project is to meet treaty fishery objectives of the Confederated Tribes of the Umatilla Indian Reservation, while allowing current irrigation and other present water uses to continue.


SNOQUALMIE
WENATCHEE
CHELAN
KING CO.
ALPINE LAKES AREA MANAGEMENT UNIT
NATIONAL
KEECHELUS LAKE
KACHESS LAKE
CLE ELM LAKE
CLE ELM ENLARGEMENT
CHELAN CO.
NATIONAL
Westside Canal
North Branch Canal
Ellensburg
Town Canal
COLUMBIA
WHIPPLE PUMPING PLANT
PIERCE CO.
BUMPING LAKE
BUMPING LAKE ENLARGEMENT
FOREST
Naches-Selah Canal
WYMER DAM AND RESERVOIR
KITTITAS CO.
RIMROCK LAKE
LEWIS CO.
EAST SELAH REREGULATING RESERVOIR
Yakima
RIVER
SULPHUR CREEK DRAIN PUMP
GRANGER DRAIN PUMP
Roza Canal
Sunnyside Canal
BENTON CO.
TOPPENISH SIMCOE IRRIGATION DEVELOPMENT
Toppenish Creek
Toppenish
Sunnyside
North Richland
Richland
Pasco
SNAKE RIVER
SKAMANIA CO.
YAKIMA
INDIAN
RESERVATION
Logy Dry Creek
Satus
Mabton
Prosser
YAKIMA CO.
KLICKITAT CO.
SATUS CREEK IRRIGATION DEVELOPMENT
LEGEND
1 - EASTON DIVERSION DAM
2 - WESTSIDE CANAL DIVERSION
3 - THORPE MILL DIVERSION DAM
4 - TOWN DIVERSION DAM
5 - ROZA DIVERSION DAM
7 - NACHES/COWICHE DIVERSION
8 - ROZA POWERPLANT WASTEWAY
9 - WAPATO DIVERSION DAM
10 - OLD RESERVATION CANAL DIVERSION
11 - SUNNYSIDE DIVERSION DAM
12 - SNIPES/ALLEN DIVERSION
13 - TOPPENISH CREEK DIVERSION
14 - MARION DRAIN DIVERSION
15 - TOPPENISH CREEK/SATUS UNIT DIVERSION
16 - SATUS CREEK DIVERSION DAM
17 - PROSSER DIVERSION DAM
18 - HORN RAPIDS DIVERSION DAM
19 - WAPATOX DIVERSION DAM
20 - TANEUM DIVERSION DAM
☐ FISH LADDER IMPROVEMENTS
○ FISH SCREEN AND/OR BYPASS IMPROVEMENTS
CANADA
SEATTLE
WASHINGTON
IDAHO
OREGON
VICINITY MAP
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
YAKIMA RIVER BASIN
WATER ENHANCEMENT PROJECT
WASHINGTON
JANUARY 1984
ADVANCE PLANNING

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

REGION Pacific Northwest	Yakima River Basin Water Enhancement Project, Washington	PREPARATION DATE January 16, 1985

ADVANCE PLANNING SCHEDULE		PRECONSTRUCTION REPORT SCHEDULED FOR COMPLETION	BENEFIT/COST RATIO	
INITIATION	COMPLETION		DIRECT	DATE
FY 1987	FY 1989	September 1989	(2.2) 1/	October 1986

SUMMARIZED FINANCIAL DATA

Advance Planning Funding Schedule

	Total	Cost to date as of	FY 1987		Balance
Reclamation:	$2,125,000		$100,000		$2,025,000
Other Federal:					
Non-Federal:	675,000		100,000		575,000
o committed o tentative					
TOTALS	$2,800,000		$200,000		$2,600,000

PROJECT COST AND REPAYMENT ALLOCATION DATA

COST ALLOCATIONS 2/		REPAYMENT 2/		AMOUNTS PER ACRE	
Irrigation		By Irrigators		Irrig. Invest.	Payment Capacity
Power		By Power		Repayment of Investment	
M&I Water		By M&I Water		By Irrigators	Annual Charges:
Recreation		By Ad Valorem		By Power Revenues	O&M
F& WL		By Others		By M&I Water Users	Construction
Flood Control					
Hwy. Impr.					
Other		Nonreimbursable			
TOTAL	$202,000,000	TOTAL	$202,000,000		

STATUS:

STATUS OF AUTHORITY:	ESTIMATED CONSTRUCTION COST: $202,000,000
STATUS OF LAND CERTIFICATION:	STATUS OF NEPA COMPLIANCE:
	PROJECTED/XXXXXX DATE:

7-2144B (7-83)
Bureau of Reclamation

Yakima River Basin Water Enhancement Project, Washington - 2

GENERAL INVESTIGATIONS

ADVANCE PLANNING DATA SHEET

Bureau of Reclamation

DESCRIPTION OF POTENTIAL PROJECT: The potential project is located in Yakima, Kittitas, and Benton Counties in south-central Washington. Feasibility study was authorized by Public-Law 92-162. A preferred plan for the Yakima River Basin Water Enhancement Project has not been identified at this point but is expected to be identified in 1986. It is possible that the plan could resemble one of the options now under consideration. That option is a fishery enhancement and supplemental irrigation plan that includes construction of storage elements to provide additional water supplies, and implementation of nonstorage elements to more efficiently use water supplies. Storage elements include (1) enlargement of existing Bumping Lake or construction of a new Wymer reservoir and (2) enlargement of existing Cle Elum Lake by 15,000 acre-feet. Nonstorage elements include (1) onfarm water conservation measures, (2) improvement in carriage system efficiencies, (3) reuse of drain flows, and (4) other measures. A water management plan for more efficient utilization of present water supplies also is to be developed. Irrigation of new lands on the Yakima Indian Reservation will be part of the final basin plan, and specifics are being developed in cooperation with the Yakima Indian Nation. A fishery passage and protective facilities program includes 20 sites in the basin as a part of the plan and some facilities already are under construction through funding provided by Bonneville Power Administration, Bureau of Reclamation, Bureau of Indian Affairs, and the State of Washington. A plan formulation working document is scheduled for completion in early 1986.

JUSTIFICATION: Water supplies in the Yakima River Basin have been inadequate to meet all needs since near the turn of the century. At various times additional supplies were provided or agreements made to help reduce conflicts over water use. The 1977 drought dramatically illustrated that water shortage is still a major problem in the basin. Conflict between irrigation and other water uses such as instream uses also has been growing rapidly in recent years. One effect of the conflict is the large amount of litigation on water use and water rights in the courts. Court rulings have required releases to increase instream flows for fishery purposes these releases have reduced water supplies for irrigation. In the absence of a cooperative resolution, conflict between Indian and non-Indians will intensify and litigation also will increase. This project is a critical element in the cooperative effort among the State of Washington, Yakima Indian Nation, irrigation districts, and the Federal Government to resolve critical water needs.

Under a plan which includes a 400,000 acre-foot Bumping Lake Enlargement and nonstorage measures, instream flows would be improved to the extent that harvested anadromous fish would increase from 17,000 fish annually without the project to 382,000 fish annually with the project. Under this storage plan, irrigation districts having the greatest threat of water shortage would receive at least 70 percent of their recent use in good water years except one of the 52 years of record. Nonstorage conservation measures would improve water supply availability in the one critical year. Resident fish and flood control also would provide benefits to the project.

Anadromous fish production in the basin has declined steadily to the point that two runs of salmon are now extinct in the basin and the other runs are in danger of extinction. The Northwest Power Planning Council created by the Pacific Northwest Electric Power Planning and Conservation Act of 1980, has designated the Yakima basin as a top priority for early action in its fish and wildlife program. As a part of the fish and wildlife program, Bonneville power Administration is sharing in the costs of fishway improvements and the state legislature is considering a program to assist in financing the project. Additional water supplies, conservation of water, and means toward more efficient methods of operation are needed.

ADVANCE PLANNING STUDIES: Advance planning will include required preconstruction activities with emphasis on refinement of preferred plan facilities and operation, particularly as related to the existing Yakima Reclamation Project. Environmental compliance activities will be completed, including additional cultural resource studies and further cooperative activities with State and Federal fish and wildlife agencies. Repayment negotiations will be conducted, and potential sources of up-front financing and other cost-sharing and financing will be confirmed.

Footnotes:

1/ Based on plan including a 400,000 acre-foot Bumping Lake Enlargement. Benefit/cost ratio computed at 8-5/8 percent interest.

2/ Current studies of the Yakima River Basin only have identified potential elements. As such there is not a preferred plan with specific elements and features. Accordingly, a cost and repayment allocation is not yet appropriate. A major portion of the capital cost would be allocated to fisheries. The allocation to irrigation, power, and flood control probably would constitute about 20 percent of the total project cost.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project	State
E&R Center	Atmospheric Water Resources Management Program	Colorado

Initiation	Completion	Percentage Cost Sharing	Type of Program
	On-going		Applied Research

Summarized Financial Data

General Engineering and Research Funding Schedule

	Estimated Total	Total to September 30, 1985	Program FY1986	Estimate FY1987	Balance To Complete
Reclamation:	$215,755,892	$119,651,695	$6,369,965	$4,800,000	$84,934,232
Non-Federal:					
Other Federal:					
TOTAL	$215,755,892	$119,651,695	$6,369,965	$4,800,000	$84,934,232

Description of Program

Low-cost augmentation of surface and ground water supplies from renewable sources without permanent structures can be an important part of resolving both long-range water resource and immediate drought problems. The primary objective of the Atmospheric Water Resources Management Program (operating under the name, Project Skywater) is to develop scientific weather modification into a practical, operational technology that will permit the conduct of well designed and evaluated, environmentally and sociologically acceptable, cost-shared cloud seeding operations to help meet the growing need for additional clean water for agriculture, energy development, and municipal and industrial purposes. The first priority of Project Skywater is to develop reliable methods for increasing snowpack and runoff in the mountainous West through cloud seeding. Snowpack enhancement is considered the most advanced precipitation augmentation technology and offers the greatest potential of near-term application to relieve developing water shortages in the Western United States.

Estimates of future water needs and recurring drought have stimulated national, State, and local water user interest in cloud seeding as indicated by continuing operational seeding projects and requests for planning, operational, and analysis assistance.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Atmospheric Water Resources Management Program (continued)

Cooperation with local, State, and national authorities and involvement of the general public have been continuing features of the Atmospheric Water Resources Management Program both in the United States and abroad. Recent and ongoing foreign field programs in the Canary Islands, Morocco, and Panama are indicative of the Program's international impact. Cooperation takes many forms, including: formalized agreements for joint cost sharing of research, local advisory boards, special studies to meet locally expressed problems, development of evaluation criteria for cloud seeding programs, and working directly with foreign governments in supplying technical assistance, training, and equipment to effectively transfer the technology.

The program requires some personnel to be located at project field offices for public involvement and local cooperation, contract monitoring and coordination, and research management. Currently two field projects are in operation, the Sierra Cooperative Pilot Project, headquartered at Auburn, California, and the Colorado River Augmentation Demonstration Program located in the Montrose, Colorado area. Approximately 70 percent of the research effort will be performed through contracts, grants, and cooperative agreements with universities, private firms, State agencies, and other Federal agencies.

I. Comprehensive Development and Adaptation of Technology

A. Development of Cloud Seeding Techniques	($900,000)	($200,000)

Icing rate meters, radiometers, and other equipment for recognizing optimum seeding opportunities will be tested under field conditions. This item also includes fixed costs of facilities and mobile equipment used in weather modification research.

B. Planning, Special Studies, and Other Support	($704,912)	($675,000)

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Atmospheric Water Resources Management Program (continued)

Use of digital computers continues to be a vital part of weather modification research and operations. Rapid processing of large data quantities and near real time forecasting and modeling analyses require computers. This item includes continued support for the programming, operation, and communication costs of the Bureau's Environmental Data Network, including additional costs in FY 1986 to reconfigure the system to accommodate a change by the National Weather Service in their method of furnishing data. The upgrade of the division's minicomputer network planned for FY 1986 and FY 1987 will provide an enhanced capability that will significantly reduce dependency on larger, higher-cost mainframe computer systems. Research use of satellite data will continue to develop a cloud census for assessing weather modification opportunities. Editing, archival, retrieval, and analyses of all experimental data collected will continue.

To facilitate long-range planning, the computer-based tracking system initiated in FY 1985 will be expanded in FY 1986 and FY 1987. This system will be used to monitor activities, schedules, and resource utilization of the Atmospheric Water Resources Management Program and other research programs using technology developed by Project Skywater.

C. National Program Cooperative Research Projects	($ 50,000)	($ 55,000)

This item will continue to fund small cooperative studies with States and other Federal agencies with weather modification interests and related activities.

D. Environmental Effects Projects	($ 75,000)	($ 75,000)

Funding will provide preparation and review of all environmental and social impact material to meet both regulations and locally imposed requirements. Suspension criteria are being developed and updated for each program to halt cloud seeding when potential adverse impacts may occur, such as floods, avalanches, or crop damage. Studies will be undertaken in FY 1986 and FY 1987 to assess new social and environmental issues that could affect future research and use of cloud seeding technology.

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Atmospheric Water Resources Management Program (continued)

E. Sierra Cooperative Pilot Project ($2,620,226) ($2,360,000)

This cooperative project is being continued to establish the feasibility of increasing snowpack during winter storms in the American River Basin and nearby watersheds of the Sierra Nevada in northern California. Physical structures of California storms are significantly different from those of storms farther inland, so that results of experiments in the Colorado Basin are not applicable in California. It is estimated that seeding could increase annual runoff in the Sierra Nevada by 5 percent with a benefit-to-cost ratio exceeding 10:1. The benefits would include increased water supplies for the Central Valley of California and in the Tahoe Basin of Nevada, increases in hydropower generation, and improved water quality in the San Joaquin Delta. Randomized seeding experiments that began in FY 1983 are planned to continue through FY 1988. Project activities are coordinated with the multiagency River Forecast Center at Sacramento to avoid contributing to a flood or giving the appearance of doing so. The Pacific Southwest Forest and Range Experiment Station, U.S. Forest Service, will continue studies for assessing the environmental impacts of cloud seeding. Private and municipal utilities conducting applied cloud seeding in the area will continue to cooperate in the project.

II. Assessment and Demonstration of Technology

A. High Plains Cooperative Program ($ 683) (- 0 -)

These carryover funds will be used to retire outstanding obligations for services already performed.

B. Comprehensive Compilation, Evaluation, and Summary Studies ($ 54,785) ($ 50,000)

Analysts will study all significant developments in weather modification technology to maintain state-of-the-art knowledge within the Bureau. Cloud models will be further developed to provide aid to field experiments. A numerical model to improve targeting of effects in winter orographic seeding projects is scheduled to be developed by 1988.

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Atmospheric Water Resources Management Program (continued)

C. Colorado River Augmentation Demonstration Program	($ 614,224)	($610,000)

This program will continue to gather cloud and environmental research data on the Grand Mesa, near Montrose, Colorado, and is concentrating on improving our knowledge of the meteorological, environmental, and sociological factors that affect the application of cloud seeding as a water management technology. This cloud and environmental research program is designed to improve the already favorable benefit-to-cost ratio of winter snowpack augmentation in the Colorado River Basin and to help solve Western water problems. Field testing will continue on evolving concepts for recognizing, responding to, and treating seeding opportunities.

D. Southwest Cooperative Operational Demonstration Program	($600,000)	(- 0 -)

This comprehensive local/State/federal cooperative weather modification program will test existing cloud seeding technology for enhancing precipitation from summer convective clouds and its feasibility as an alternative resource to augment the declining water supplies of West Texas and Oklahoma, as well as other semi-arid areas. Field efforts will be conducted in conjunction with operational seeding projects being funded by State and local groups. The Bureau will provide technical and scientific guidance required to build a solid data base for this and future programs.

III. Program Management and State and Local Assistance	($750,135)	($775,000)

Program management of large and varied field research projects and procurement of expensive equipment and services require a central scientific coordination staff. Scientific personnel are directly assigned to the field projects for closer coordination and contract monitoring. Technical assistance in the form of loan of scientific equipment, planning and evaluation assistance, support of joint studies, or access to Reclamation computer programs for improvement of locally sponsored cloud seeding projects will be continued under this item. The Bureau will also cooperate in state-initiated cost-sharing research demonstration programs. Such cooperation not only helps to ensure that the design and conduct of user-oriented projects have the benefit of the latest technique and expertise developed through Project Skywater research but also provides data which can be used for additional evaluation and verification of results from application of developed techniques. Legal and audit expenses are also included in this budget item.

PF-44
Bureau of Reclamation

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

Region	Project		State
E&R Center	Program Related Engineering and Scientific Studies		Colorado
Initiation	Completion	Percentage Cost Sharing	Type of Program
Ongoing	Ongoing	0	Research

Summarized Financial Data

General Engineering and Research Funding Schedule

	Estimated Total	Total to September 30, 1985	Program FY 1986	Estimate FY 1987	Balance To Complete
Reclamation:	$ 155,823,000	$ 65,061,535	$ 7,535,002	$ 4,870,000	$ 78,356,463
Non-Federal:					
Other Federal:					
TOTAL	$ 155,823,000	$ 65,061,535	$ 7,535,002	$ 4,870,000	$ 78,356,463

Description of Program

This is a comprehensive scientific and engineering research program directed toward solving planning, design, construction and operational problems involved in developing water-related resources in the western United States. The studies provide breakthroughs that reduce costs, increase efficiency and reliability, and enhance safety. Typical savings include $20,000,000 on one dam through development of a new labyrinth spillway to increase capacity for larger design floods (similar savings are anticipated on several other dams); $4,000,000 through improved powerplant efficiency at Hoover Dam; and $3,000,000 by use of special air slots to prevent cavitation damage at Glen Canyon Dam. A recent study showed overall benefits-cost ratio of over 10 to 1. Other advances include use of selected improved weed and algae control methods in lakes, reservoirs, and canals (saving at least $14,000,000 annually); more efficient and productive irrigation practices and use of available waters; and introduction of new materials such as plastic drainpipe and new concrete repair materials which have significant economies for a wide range of applications. Studies in the broad research program emphasize better evaluation methods for social, economic, and ecological impacts of projects; better engineering concepts, materials, and techniques for water resources structures; and improved electrical power generation. Studies are accomplished both in-house and through grants, cooperative agreements and contracts to universities and private firms. The program consists of seven major activities as follows:

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987
GENERAL ENGINEERING AND RESEARCH (continued)		
Program Related Engineering and Scientific Studies (continued)		
(1) Water Supply Augmentation and Conservation	($518,118)	($450,000)

Water supply augmentation and conservation is directed toward identifying and developing practical techniques for managing available water supplies and conserving existing supplies. Studies promise large returns by developing improved methods for determining irrigation water needs, better management techniques for the water and land, and lower investment costs.

Data are collected and analyzed on present methods of irrigating and farming, and optimum practical irrigation efficiencies are determined. Through this research, project planning and design criteria will be advanced so lower unit costs and better use of resources will be obtained.

Additional studies are conducted to improve the Bureau's management of water on and beneath the land surface in order to better utilize the water and control its damaging effects. Studies investigate improved procedures for predicting and handling floodflows; statistical and computer-oriented techniques for managing reservoir and river basin operations; and effective, safe methods of controlling aquatic weeds which restrict flows through channels and create major operational problems. Groundwater studies include both management and quality of supplies.

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987
(2) Water Quality and Ecology	($742,998)	($575,000)

Water quality research is focused on finding new and better ways to protect the quality of water resources so that available supplies are not rendered unfit for use and so that environmental and ecological balances are not adversely upset. Studies encompass research on control of water quality by such methods as reaeration of reservoir and river water, better management of impoundments and streams, determination of potential effects of residues of selected herbicides used for weed control, identification of other sources of pollution such as selenium and other heavy metals,and acid precipitation effects on Bureau watersheds. Ecological studies determine effects of projects and water management on the overall environment and ecology, provide data to design projects for minimum impact, and develop general limnology data and planning tools for predicting future impact.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Program Related Engineering and Scientific Studies (continued)

(3) Planning Research	($266,963)	($100,000)

Planning research will bring improvements in the planning and decisionmaking processes for new projects and activities, in criteria used as the basis for planning, and in a better understanding for and use of economic, legal, social, and ecological aspects of water resources development and management efforts. These studies will develop systems analysis and operations research techniques for better consideration of economic factors and will improve planning procedures through advanced techniques for considering on a multiobjective basis more alternatives to provide for more flexible projects. Other studies will develop more appropriate and comprehensive methods for evaluating benefits and costs of projects, and the techniques for making economic, social, and technological projections. Improved forecasts of economic returns through new methods of correlating crop productivity with soil and water characteristics will be developed.

(4) Engineering and Materials	($2,733,946)	($1,845,000)

Engineering and materials studies will improve the design of water storage, control, and transmission faciliies; hydropower and pumping facilities; and electrical generation and transmission facilities. It includes research on materials used in these facilities, on foundation and earthquake considerations, and on improved methods of excavation, construction, operation, and maintenance. The goal is to improve the economy, efficiency, and safety of engineering structures involved in water resources development. Concrete and structural research seeks new methods of producing better, more economical concrete with predictable long-time performance that will lead to safer, more economical water resource structures. Studies emphasize roller compacted concrete, shotcrete, improved cements and admixtures, and evaluation of factors that make concrete products more durable. Hydraulics research helps solve the wide variety of design, operational, and maintenance problems associated with water control facilities. Research is conducted on high velocity flows and the protection of facilities from such flows, as well as on problems of energy dissipation, water measurement, pipeline and tunnel hydraulics, water wells, automatic and remote control of water conveyance systems, and drainage research. Additional investigations are directed toward improving the design, performance, maintenance, and testing of hydraulic turbines, pumps, gates, and valves. Electric power research will continue to improve the efficiency and reliability of electrical power generation and control. The studies include central control facilities,

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987

GENERAL ENGINEERING AND RESEARCH (continued)

Program Related Engineering and Scientific Studies (continued)

system stability analytical studies, automated computerized system controls, variable-speed constant-frequency machinery, criteria for regulating effort between major interties, and noise abatement and safety factors for powerplant facilities. Geotechnical investigations improve the economy, safety, and performance of foundations, canals, pipelines, earth dams, and other soils structures. Research is conducted on the effects of earthquakes, overburden and soil pressures on steel, concrete, and plastic pipe, sampling and testing techniques, and engineering properties of soils. Research in rock mechanics and geology will increase the safety and economy of structures to be built on or in rock by obtaining more accurate design data on the behavior of rock masses. Studies include improvement of rock tests and facilities and improved grouting techniques. Research in materials and instrumentation involves studies of a variety of materials, (bituminous materials, chemicals, metals, paints, and plastics) which are necessary to safety, economy, and long life of structures. Studies are also made to select, improve, and develop instrumentation and instrumentation systems for use on projects.

(5) Advanced Energy Applications	($716,361)	($ 400,000)

The advanced energy applications program consists of various energy studies designed to implement the use of renewable and alternative energy resources in Bureau work, particularly where such energy sources can be used to augment power from the Bureau's hydrosystems and in remote areas where access to grid power is limited. The primary purpose is to assist Bureau planners and designers in evaluating low cost and effective means of providing power for project use and in preparing appropriate designs and specifications for various alternative energy systems. Research areas may include pumped storage, solar, wind, low-head hydropower, and conventional hydropower.

Specifically, the program includes (1) performing studies to evaluate new energy systems and designs applicable to Bureau needs, programs, and projects; (2) compiling information on design characteristics, costs, and technical performance of commercially available energy systems for current and future Reclamation use; and (3) providing assistance in preparing the necessary guidelines, specifications, and acceptance test procedures for such energy systems for specific Bureau applications. Nonconventional energy sources research will allow study of innovative new ideas proposed by private industry for possible application.

SCHEDULE OF GENERAL INVESTIGATIONS PROGRAM

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987
GENERAL ENGINEERING AND RESEARCH (continued)		
Program Related Engineering and Scientific Studies (continued)		
(6) Dam Safety	($840,422)	($700,000)

The dam safety research program is conducted to determine critical factors in all areas of dam safety. Research will identify technology already developed, what new information is needed, and develop technology required to assure that existing and planned structures have the highest possible degree of safety. Areas to be studied are risk analysis, dam foundations, dam structure, floods, spillways and outlet works, earthquakes, and instrumentation. Risk analysis studies are conducted to determine the applicability of risk analysis and decision analysis techniques to dam planning, design, and construction.

Dam foundation research will be conducted to develop new techniques for evaluating dam foundation conditions both before and after remedial treatment such as grouting and to monitor conditions during reservoir filling. Studies will include seepage under dams, evaluation of grouting effectiveness, gravel filter design criteria, and improved soil-rock testing techniques and equipment. Dam structure studies will be conducted covering zone filter criteria, soluble material in impervious zones, identification of potentially erosive soils, effects of cracking in arch dams, hydraulic fracturing, soil saturation and effect on permeability, and variation (changes) in soil properties after placement. Flood research will cover the prediction of inflow floods for design of spillways and outlet works and dam freeboard. Research will involve studies on real time flood prediction, techniques for estimating runoff and flood size, use of rainfall and streamflow gages, dam failure hydrographs, floodflow routing, and computer applications of storm transposition for safety of dams reviews. Spillways and outlet works research is conducted to mitigate damage from erosion and to determine feasibility of new types of emergency spillways. Specific studies will involve known problem areas such as cavitation, erosion of abutments, or river scour downstream. Earthquake studies will determine seismic response of earth structures to compare actual events with laboratory and computer model predictions, surface disruption of dam foundations, reservoir-induced earthquakes, prediction of landslide-induced waves, determination of appropriate earthquake loadings for design, and to develop techniques for geologic assessment of earthquake hazards. Instrumentation research will involve development of dam safety monitoring systems comprised of instruments in the dams and foundations, data transmission systems, and criteria for processing and evaluating a variety of data from many dams. Data will include moisture, stress, and water-level readings and will be closely monitored during reservoir filling.

GENERAL ENGINEERING AND RESEARCH (continued)

Program Related Engineering and Scientific Studies (continued)

In addition to research programs listed on the preceding pages, certain specialized research is carried on by the regions. These activities are supported by other appropriations and are primarily concerned with weed and phreatophyte control, sedimentation and water salvage, river channelization, vegetation studies, and fish and wildlife research.

PROGRAM ITEM	PROGRAM FY 1986	ESTIMATE FY 1987
(7) Laboratory and Plant Equipment and Maintenance	($1,716,194)	($800,000)

Funds are used to replace outdated equipment and to increase maintenance levels of all equipment. Laboratory equipment and maintenance will provide modern, efficient, and wellmaintained equipment for Reclamation's central laboratory at the Engineering and Research Center. Such equipment is jointly used in support of research, project testing, and outside agency cooperative projects with major and unique facilities made available to the scientific community.

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: General Investigations

Bureau of Reclamation

	Estimated 1986	Estimated 1987	Increase or decrease (-)
Program and Financing:			
Total direct obligations	$ 34,643	$ 27,849	$ -6,794
Unobligated balance available, start of year	-637	-29	608
Unobligated balance available, end of year	29	---	-29
Appropriation: (Reclamation Fund, Special Fund) . . .	$ 34,035	$ 27,820	$ 6,215
Reduction for Public Law 99-177 (Gramm-Rudman)	-1,464	---	1,464
Object Classification:			
11.0 Personnel compensation.	$15,694	$14,044	$ -1,650
12.0 Personnel benefits: Civilian	1,899	1,693	-206
13.0 Benefits for former personnel	50	---	-50
21.0 Travel and transportation of persons.	793	793	---
22.0 Transportation of things	220	220	---
23.1 Standard level user charges	658	698	40
23.2 Communications, utilities and other rent	510	600	90
24.0 Printing and reproduction	170	181	11
25.0 Other services.	11,799	7,575	-4,224
26.0 Supplies and materials.	815	830	15
31.0 Equipment	1,915	1,100	-815
41.0 Grants, Subsidies, and Contributions	120	115	-5
99.0 Total direct obligations.	$34,643	$27,849	$ -6,794

GENERAL INVESTIGATIONS
Explanation of differences between obligations in U.S. Budget
(Itemization of Estimate) and Budget Justifications
(In thousands of Dollars)

Items of reconciliation	Obligations 1986	Obligations 1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$34,643	$27,849
Prior year funds	29	-29
Non-Federal advances	1,203	1,679
Reduction for Public Law 99-177 (Gramm-Rudman)	-1,464	---
Budget Justifications	$34,411	$29,499

CONSTRUCTION PROGRAM

INDEX

Project or Activity	State	Page Number
Ainsworth Unit, P-SMBP (D&MC)	Nebraska	367
Animas-LaPlata Project (UCRB)	Colorado-New Mexico	387
Arbuckle Project (D&MC)	Oklahoma.	365
Auburn-Folsom South Unit, Central Valley	California	209
Belle Fourche (P-SMBP)	South Dakota	316
Boise, Arrowrock Dam (D&MC)	Idaho	365
Boise, Payette Division (D&MC)	Idaho	365
Bonneville Unit, Central Utah (UCRBF)	Utah	413
Bostwick Division (P-SMBP) (D&MC)	Nebraska-Kansas	369
Boulder Canyon Project	Arizona-Nevada	171
Bradbury Dam, Cachuma Project (Safety of Dams)	California	377
Brantley	New Mexico	279
Buffalo Bill Dam Modification (P-SMBP)	Wyoming	356
Canyon Ferry Unit (P-SMBP)(D&MC)	Montana	367
Casitas Dam, Ventura River Project (Safety of Dams)	California	377
Central Arizona Project (Includes Water Development, Power Development, and Non-Indian Distribution Systems)	Arizona-California-New Mexico-Nevada-Utah	449
Central Utah (UCRBF):		
Bonneville Unit	Utah	413
Jensen Unit (D&MC)	Utah	441
Uintah Unit (Preconstruction Activity)	Utah	383
Upalco Unit	Utah	432
Central Valley	California	191
Chief Joseph Dam:		
Manson Unit (D&MC)	Washington	369
Oroville-Tonasket Unit	Washington	329
Whitestone-Coulee (D&MC)	Washington	369
Colorado River Basin Salinity Control:		
Title I Division	Arizona-California	183
Title II Division:		
Grand Valley Unit	Colorado	241
Las Vegas Wash Unit	Nevada	273
Paradox Valley Unit	Colorado	247

CONSTRUCTION PROGRAM - 2

INDEX

Project or Activity	State	Page Number
Colorado River Bridge Crossing (Preconstruction Activity)	Arizona-Nevada	165
Colorado River Front and Levee System (D&MC)	Arizona-California	365
Columbia Basin	Washington	336
Columbia Basin, Third Powerplant	Washington	347
Crooked River, Ochoco Irrigation District (R&B)	Oregon	373
Cultural Resources Activities (D&MC)	Various	365
Dallas Creek (UCRBF)	Colorado	395
Departmental Dam Safety Program (Safety of Dams)	Various	378
Dickinson, P-SMPB (D&MC)	North Dakota	369
Dolores (UCRBF)	Colorado	402
Drainage and Minor Construction, (C&R)	Various	364
Drainage and Minor Construction, (UCRBF)	Various	440
East Bench Unit (P-SMBP) (D&MC)	Montana	367
Eden (D&MC)	Wyoming	369
Explanation of Difference Between President's Budget and Budget Estimates (Construction Program)	Various	478
Explanation of Difference Between President's Budget and Budget Estimates (CRBP)	Various	479
Explanation of Difference Between President's Budget and Budget Estimates (UCRBF)	Various	480
Farwell Unit (P-SMBP) (D&MC)	Nebraska	367
Fruitgrowers Dam (Safety of Dams)	Colorado	376
Fryingpan-Arkansas (D&MC)	Colorado	365
Garrison Diversion Unit (P-SMBP)	North Dakota-South Dakota	287
General Statement of Construction Program	Various	140
Gila Project (D&MC)	Arizona-California	366
Gramm-Rudman Impact	Various	160
Grand Valley, Orchard Mesa (R&B)	Colorado	373
Grand Valley Unit (CRBSCP)	Colorado	241
Grass Valley Creek Debris Dam, CVP (Preconstruction Activity)	California	164

CONSTRUCTION PROGRAM - 3

INDEX

Project or Activity	State	Page Number
Headgate Rock Hydroelectric Project (BIA)	Arizona	177
Heart Butte (P-SMBP) (Safety of Dams)	North Dakota	376
Itemization of Estimate:		
Construction Program	Various	475
Colorado River Basin Project	Various	476
Upper Colorado River Basin Fund	Various	477
Jensen Unit, Central Utah (UCRBF)	Utah	441
Klamath (D&MC)	Oregon-California	366
Lake Tahoe Dam, Newlands Project (Safety of Dams)	California	377
Las Vegas Wash Unit (CRBSCP)	Nevada	273
Leadville Mine Drainage Tunnel (D&MC)	Colorado	366
Lewiston Orchards Project (Safety of Dams)	Idaho	376
Little Panoche Dam, CVP (Safety of Dams)	California	377
Los Banos Dam, CVP (Safety of Dams)	California	377
McGee Creek	Oklahoma	309
Method of Financing Table for Construction Program	Various	154
Minidoka, Island Park (Safety of Dams)	Idaho	380
Minidoka, Jackson Lake Dam (Safety of Dams)	Idaho-Wyoming	376
Miscellaneous Engineering Services (D&MC)	Colorado	366
Miscellaneous Project Programs, Central Valley	California	228
Modifications and Additions to Completed Project Facilities (UCRBF) (D&MC)	Various	441
Modification Reports and Preconstruction Activity, (Safety of Dams)	Various	377
Mountain Park (D&MC)	Oklahoma	366
Narrows Unit (P-SMBP) (Preconstruction Activity)	Colorado	164
Navajo Unit (Safety of Dams)	Colorado-New Mexico	376
Newlands (D&MC)	Nevada	366
Newlands, Lahontan Dam (Safety of Dams)	Nevada	380
New Contracts Awards Tabulation	Various	149

CONSTRUCTION PROGRAM - 4

INDEX

Project or Activity	State	Page Number
North Loup Division (P-SMBP)	Nebraska	260
Nueces River (D&MC)	Texas	367
Newton (Safety of Dams)	Utah	376
Oahe Unit (P-SMBP) (D&MC)	South Dakota	367
Okanogan, Okanogan Irrigation District, (R&B)	Washington	372
O'Neill Dam, CVP (Safety of Dams)	California	377
O'Neill Unit (P-SMBP)	Nebraska	268
Orland, Stony Gorge (Safety of Dams)	California	380
Owl Creek Unit (P-SMBP) (D&MC)	Wyoming	367
Palmetto Bend (D&MC)	Texas	366
Paradox Valley Unit (CRBSCP)	Colorado	247
Preconstruction Activity:		
C&R	Various	164
UCRBF	Various	382
Rapid Valley, Deerfield Dam (Safety of Dams)	South Dakota	380
Rapid Valley, Pactola Dam (P-SMBP) (Safety of Dams)	South Dakota	376
Recreational and Fish and Wildlife Facilities	Various	443
Recreation Facilities at Existing Reservoirs (D&MC)	Various	369
Regional Complex (D&MC)	Nevada	369
Rehabilitation and Betterment of Existing Projects (D&MC)	Various	371
Repayment Investment Tables	Various	161
Riverton Unit, P-SMBP (D&MC)	Wyoming	369
Robert B. Griffith Water (D&MC)	Nevada	369
Sacramento River Division, Central Valley	California	225
Safety of Dams Program	Various	374
Salt River, Roosevelt Water Conservation District (R&B)	Arizona	373
Salt River Project, CAP, Plan 6 (Safety of Dams)	Arizona	377
Salt River, Stewart Mountain Dam (Safety of Dams)	Arizona	376
San Felipe Division, Central Valley	California	216
San Luis Unit, Central Valley	California	198
San Luis Valley, Closed Basin Division	Colorado	254
Seedskadee, (UCRBF) (Safety of Dams)	Wyoming	377

INDEX

Project or Activity	State	Page Number
Shoshone, Heart Mountain Division (R&B)	Wyoming	372
Shoshone, Willwood (R&B)	Wyoming	373
Strawberry Valley Project (R&B)	Utah	372
Sun River, Fort Shaw Division (R&B)	Montana	372
Sun River, Gibson Dam (Safety of Dams)	Montana	380
Sun River, Greenfields Division (R&B)	Montana	373
Title I Division (CRBSCP)	Arizona-California	183
Trinity River Division, Spring Creek Toxicity Program, CVP (Preconstruction)	California	168
Trinity River Restoration Program, CVP	California	222
Tualatin (D&MC)	Oregon	369
Uintah Unit, Central Utah (UCRBF) (Preconstruction Activity)	Utah	383
Uncompahgre (R&B)	Colorado	372
Upalco Unit, Central Utah (UCRBF)	Utah	432
Upper Snake River, Salmon Falls (Preconstruction Activity)	Idaho	164
Velarde Community Ditch (D&MC)	New Mexico	368
Washita Basin (D&MC)	Oklahoma	370
Washoe (D&MC)	Nevada-California	367
W. C. Austin, Altus Dam (Safety of Dams)	Oklahoma	376
Weber Basin Project (D&MC)	Utah	367
WEB Rural Water Development	South Dakota	322
Yakima Project:		
Fish Passage and Protective Facilities	Washington	350
Yakima-Tieton Irrigation District (R&B)	Washington	373

CONSTRUCTION PROGRAM

General Statement

Summarized Financial Data:

Fiscal Year 1986:

Appropriation	1/ $521,700,000	
Application of Prior Year Funds	99,661,427	
Non-Federal Participation - Cash	11,721,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	-22,433,000	
Total Obligations, Fiscal Year 1986		$610,649,427

Fiscal Year 1987:

Estimate of Appropriation	1/ 2/ $576,759,000	
Non-Federal Participation - Cash	24,224,000	
Total Obligations, Fiscal Year 1987		$600,983,000

All ongoing construction activities scheduled for fiscal year 1987 can be performed under current authorization, except the Central Valley Project, San Luis Unit; however, there are 9 projects 3/ that will require legislation to increase appropriation ceilings before they can be completed as authorized. Because of the potential of new authorizing legislation to reformulate the O'Neill Unit, a new project cost estimate and appropriation ceiling remains to be determined at this time.

Congress appropriated $521,700,000 for the Construction Program in FY 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce its Construction Program allotments by $22,433,000. A tabulation showing the financial impact as it applies to each project is shown on page 160.

During fiscal year 1987, the Bureau of Reclamation requests $576,759,000 for the construction program. In addition to this amount, $24,224,000 is provided by non-Federal sources. The total program of $600,983,000 will continue construction on those projects underway at the close of fiscal year 1986 and begin work on seven new initiatives, with no new project starts.

1/ Includes a distributed underfinancing of $89,500,000 in fiscal year 1986 and $89,101,000 in fiscal year 1987.

2/ In support of the Administration's energy conservation efforts, the budget for the Construction Appropriation includes approximately $80,000 for energy conservation measures in our buildings. This amount includes funds for improved energy conservation measures in our new buildings and the utilization of solar energy and other renewable energy resources.

3/ Auburn-Folsom South Unit, CVP; Trinity River Restoration Program, CVP; Oroville-Tonasket Unit, Chief Joseph Dam Project; Title II Division, CRBSCP; Garrison Diversion Unit, P-SMBP; North Loup Division, P-SMBP; Colorado River Storage Project (Public Law 84-485 amended by Public Law 92-370); and Washoe Project.

The appropriation request of $576,759,000, which has been reduced by an underfinancing amount of -$83,001,000, provides for contract earnings and other costs on 68 multipurpose construction projects and three preconstruction projects, and is subdivided as follows: $477,438,000 for regular project construction, $36,584,000 for drainage and minor construction, $3,647,000 for rehabilitation and betterment, $39,605,000 for the Safety of Dams Program, $12,765,000 for recreation and fish and wildlife facilities in the Upper Colorado River Basin, and $620,000 for preconstruction activities on three projects. Figure 1 on page 143 illustrates the elements which comprise the projected FY 1986 funding requirements for the total scheduled program, including non-Federal financing, and underfinancing. Work will proceed on 22 drainage and minor construction projects and miscellaneous engineering services. Work will be performed on up to 16 dams in the Safety of Dams Program. In addition, work will be performed on 5 rehabilitation and betterment projects where facilities have become obsolete or badly deteriorated.

Within the funds provided for the proposed construction program, $505.2 million is required to meet obligations committed by work underway prior to fiscal year 1987. An additional $160.6 million is needed to fund new activities which include new contract awards, land acquisitions, materials and supplies, rehabilitation and betterment loans, data collection and design. A tabulation of the new major contract awards appears in table 1 on page 149. Underfinancing of -$83.0 million has been included. Figure 2 shows the total scheduled program by percentage composition.

In fiscal year 1987, non-Federal cost-sharing funds of $24,224,000 will be added to the Construction Program budget request. The majority of these funds will be concentrated on Buffalo Bill Dam Modifications ($10.5 million), the Central Arizona Project ($8.0 million), and the Animas-LaPlata Project ($4.2 million).

Physical accomplishments in fiscal year 1987 reflect the application of appropriations in previous years. Fiscal year 1987 appropriations are anticipated to provide additional water and power service in the years ahead. During 1987, facilities will be completed which are capable of supplying both supplemental and full water supplies to approximately 159,600 acres of farmlands, 253,500 acre-feet of municipal and industrial water and the salvage of 48,000 acre-feet of water.

The value of subsidies provided by the Federal government to project beneficiaries in the Construction Program has been computed using a selected number of projects as a base. Utilizing the guidelines in OMB Circular A-70, the value of such subsidies was computed based upon the differential interest rates prevailing in private sector financial markets and those rates which would apply as a result of participating in Reclamation's Construction Program. The private sector interest rate utilized for the computations was based upon those rates associated with Federal Land Bank notes and bonds.

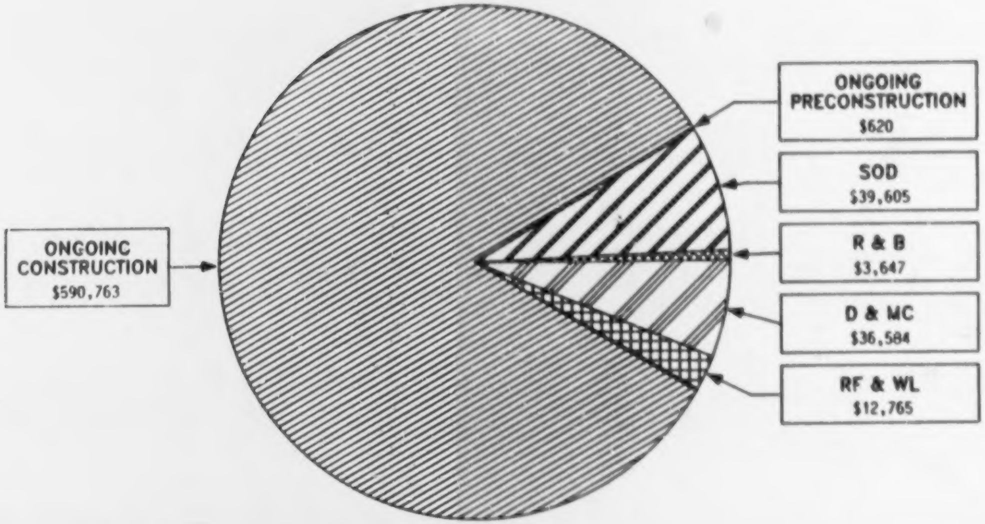
An analysis of projects in the Rehabilitation and Betterment Program using the Federal Land Bank rate of 9.70 percent (non-taxed) concluded that the present value of the discounted cash flows accounted for approximately 10 to 25 percent of the original loan value. The range of discounted cash flows are directly related with the repayment period required by project beneficiaries to repay their loan obligations. The length of the repayment period is a function of the financial capability of project beneficiaries.

Application of the Federal Land Bank yield rates against the different interest rates associated with the various projects in the remaining portion of Reclamation's Construction Program would result in a significantly larger range of net present values when compared against project costs. This is a result of different project specific authorized interest rates and the relative mix between interest-bearing (e.g. M&I and power) and non-interest-bearing (e.g. irrigation) functions.

FY1987 CONSTRUCTION PROGRAM *

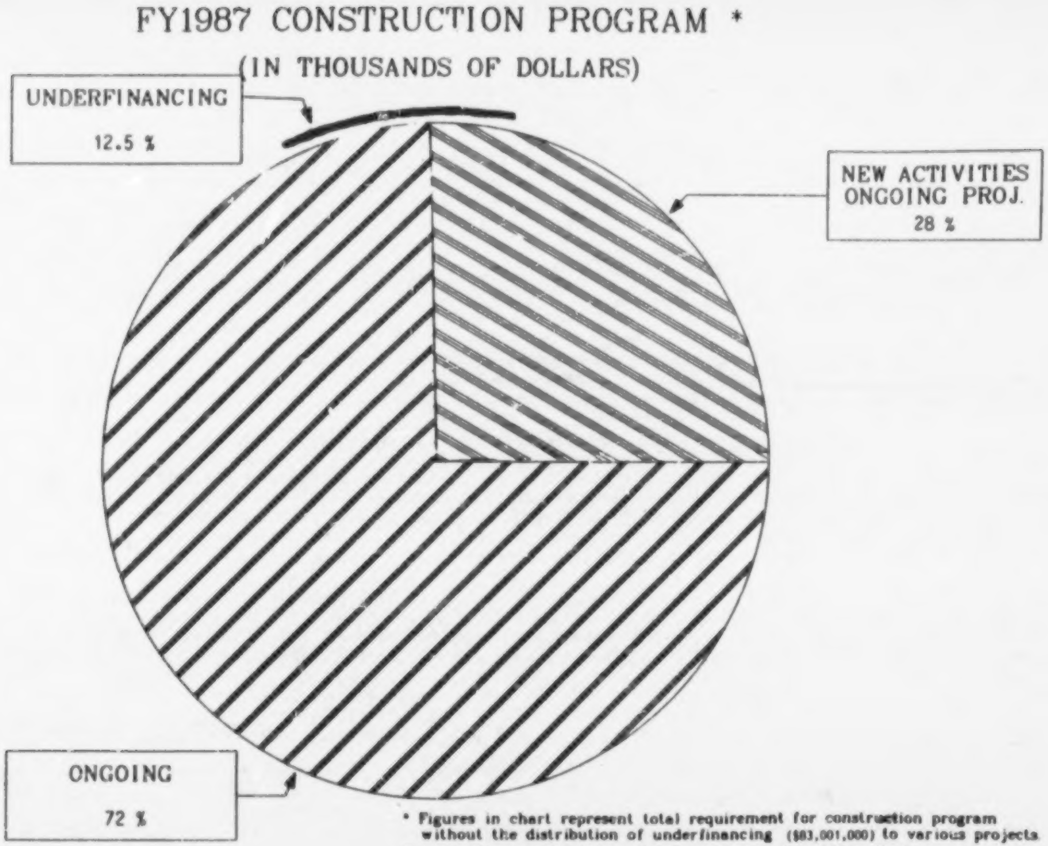
(In Thousands of Dollars)

Total Scheduled Program: $683,984



* Figures in chart represent total requirement for construction program without the distribution of underfinancing ($83,001) to various projects.

FIGURE 1. TOTAL SCHEDULED PROGRAM BY TYPE OF WORK



* Figures in chart represent total requirement for construction program without the distribution of underfinancing ($83,001,000) to various projects.

This graphic is intended to show the magnitude of the effect of underfinancing on the totalucheduled construction program.

FIGURE 2. TOTAL SCHEDULED PROGRAM BY PERCENTAGE COMPOSITION

The following is a summary of the principle projects and programs in the Construction Program in the budget year:

Animas-La Plata Project, Colorado-New Mexico. - A total of $1 million is requested for construction of the Animas-La Plata Project which will go with the $4.2 million which will be contributed by the States of Colorado and New Mexico. Ridges Basin land acquisition will commence and contracts to construct a field station and acquire equipment will be awarded. Cultural resource activities as well as other data collection activities will continue.

Belle Fourche Unit, P-SMBP, South Dakota. - Funding of $3.9 million will be used for the upgrading of the Belle Fourche Diversion Dam, North Canal, South Canal, and laterals.

Boulder Canyon Project, Arizona-Nevada. - A program of $5.8 million is included to complete relocation of transmission towers and award a contract for construction of the elevator shaft, tour galleries, and roadway alinement. Preconstruction will be continued for the visitors tour center and parking structures.

Brantley Project, New Mexico. - The funding request for the Brantley Project is $23.7 million. Acquisition of land and rights, relocations of utilities from the reservoir area, and construction of Brantley Dam will be continued. Relocation of a segment of the Atchison, Topeka, and Santa Fe Railroad and construction of facilities for fish and wildlife mitigation will be essentially completed.

Buffalo Bill Dam Modification, P-SMBP, Wyoming. - Construction of Buffalo Bill Dam continues with a program of $23.9 million, of which $10.5 million will be provided by the State of Wyoming. These funds provide for initiation of modification of dam and spillway, road relocations, north fork dike, and Shoshone Canyon conduit modifications. Construction continues on turbines, generators, transformers, and the Buffalo Bill Powerplant. Contracts completing are land acquisition and quarry and stockpile riprap.

Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah. - The Central Arizona Project is still Reclamation's largest construction activity with a fund request of $203.9 million. The funds will be used to continue construction on the Tucson Aqueduct and associated pumping plants, transmission facilities, regulatory storage and associated safety of dams activities, and supervisory control system and other permanent operating facilities. Construction will continue on one Indian and five non-Indian distribution systems and one joint use main delivery canal.

Colorado River Basin Salinity Control Projects, Arizona-California-Colorado-Nevada. - The Title I Division is programmed at $26.4 million. Construction will continue on the desalting complex and fish and wildlife mitigation measures in Arizona and California.

The Title II Division involves work on three separate units. The request of $12.0 million for Grand Valley Unit will continue hydrosalinity studies and preconstruction activities. Work will continue on the first phase of placing the West Government Highline Laterals in pipe. Contracts will be awarded for West Government Highline Canal and the second phase of placing in pipe the West End Government Highline Laterals. Preacquisition activities will continue for Wildlife Development Stages 1 and 2. The program request of $12.3 million for the Paradox Valley Unit will continue construction of the deep injection well, engineering and testing, and seismic monitoring contracts. Contracts for a pipeline, road, powerline, and testing facilities will be awarded. Operation of the brine well field will continue as well as other preconstruction activities. On the Las Vegas Wash Unit, the program consists of monitoring the Las Vegas Wash flow.

Central Utah Project, Utah. - The Central Utah Project funding request for construction totals $84.2 million.

The Bonneville Unit requires the largest amount of funds within the project, $83.8 million. Work will be completed on North Fork Siphon, Upper Stillwater Pipeline Control Structure, relocations of natural gas lines, telephone lines and power lines at Jordanelle Reservoir, Jordan Aqueduct Reach 4 - Alpine Aqueduct Reach 3, and Taylor Canal Area Drains Blocks I and II. Work will continue on Upper Stillwater Dam, Doc's Diversion Dam and Feeder Pipeline, Hades Creek Stream Inlet, Rhodes Diversion Dam and Win Stream Inlet, the Supervisory Controls for the Collection System, land acquisition for Jordanelle Reservoir, and Rehabilitation of Duchesne River Area Canals. Contracts will be awarded for the relocation of Highways 40 and 189, Alpine Aqueduct Reach 2, and Syar Tunnel Access Road.

The request for the Upalco Unit is for $50,000. The funds will be used to continue negotiations with the Ute Indians, the Central Utah Water Conservancy District and the State of Utah.

Dallas Creek Project, Colorado. - The amount requested for the Dallas Creek Project is $4.3 million. Work will be completed on Ridgway Dam and Reservoir. Filling and monitoring of Ridgway Reservoir during filling will continue.

Dolores Project, Colorado. - A total of $20.4 million is requested for the construction of the Dolores Project. Work will be completed on Project Road Paving, Reservoir Fencing - Part III, Fairview and Cahone Pumping Plants and Laterals, Dove Creek Canal land acquisition, construction of Reach II Dove Creek Canal and cultural resource activities. Land for Towaoc Canal Powerplant and Towaoc Pipeline will be acquired. Work will continue on Dolores-Norwood-May Canyon Road and South Canal. Contracts will be awarded for Williams Draw Road, McPhee Dam Guardrail, McPhee Dam Powerplant, Pleasantview-Ruin Canyon-Hovenweep Pumping Plants and Laterals, Supervisory Control Equipment and Building, and Telemetry Cable Equipment and installation.

Colorado River Front Work and Levee System, Arizona-California-Nevada. - A request for $15.9 million is included under Drainage and Minor Construction for the Colorado River Front Work and Levee System for armoring levees and for repair of damage to Reclamation facilities and bankline along the lower Colorado River.

Central Valley Project, California. - The funding request for the Central Valley Project is programmed at $29.9 million. The largest portion, $10.6 million, is scheduled for the San Felipe Division. Construction will be completed on Pacheco Conduit section 2, Hollister outlet works, Pacheco Pumping Plant, Santa Clara Conduit section 2, Coyote Pumping Plant, Hollister Conduit section 2, San Justo Dam, and installation of control and monitoring equipment.

The $1.1 million allocated for the Sacramento River Division will be for award of a contract for modification of gate 11 on Red Bluff Diversion Dam and to continue preconstruction activities for modification of the Tehama-Colusa Canal headworks, fishscreens, the bypass at the headworks settling basin, and a barrier at the dual-purpose channel, Tehama-Colusa Fish Facilities.

The $12.2 million allocated for the San Luis Unit will include $11.5 million for ongoing activities at Kesterson Reservoir and the San Luis Drain. Land acquisition for disposal of sediment at Arroyo Pasajero will continue.

The $0.4 million allocated for Miscellaneous Project Programs will continue work on the Delta Support Studies.

The $1.0 million allocated for the Auburn-Folsom South Unit will be for continuation of miscellaneous agreements with State agencies to manage the lands, for maintenance and service contracts, and for services associated with ongoing studies.

The $4.6 million allocated for the Trinity River Restoration Program will be for construction activities in the Trinity River above Grass Valley, the South Fork of the Trinity River and tributaries. Construction of artificial propagation facilities, fishery monitoring, land use evaluation, and wildlife habitat restoration will begin. A contract will be awarded for construction of phase 1 of the Trinity River fish hatchery modification. Design work continues on the Grass Valley Creek Debris Dam.

Chief Joseph Dam Project, Washington. - $1.7 million will be allocated to the Oroville-Tonasket Unit of the Chief Joseph Dam Project in Washington. Contract work will complete on the replacement of the obsolete Osoyoos Distribution System with a pressure pipeline system including Osoyoos Pumping Plant. This system will provide highly effective pressure irrigation service to the final 3,950 acres of the 10,000-acre project. Work will continue on facilities to enhance the steelhead fishery.

Columbia Basin Project, Washington. - The amount included for the Columbia Basin Project is $31.0 million. Construction of necessary drainage facilities will continue. The environmental impact statement for the development of the remaining 538,000 acres authorized will be completed and cost sharing discussions will continue. When all units of the Third Powerplant are in operation as a peaking plant, a 6-mile stretch of the Columbia River between Grand Coulee and Chief Joseph Dam pool will be subjected to tailwater fluctuations up to 22 feet per day. The riverbank can be stabilized by resloping, riprapping, and installing a system of subsurface drains. This work will continue. Work will also continue on installation of fire protection facilities, replacement and installation of defective circuit breakers, and installation of the 115/230-kilovolt overhead transmission lines.

Garrison Diversion Unit, P-SMBP, North Dakota. - A budget of $18.0 million is requested for completion of contracts awarded prior to October 1, 1985, and for completion of required activities associated with project shutdown.

Headgate Rock Hydroelectric Project, Arizona. - The request of $6.8 million is included to continue procurement of generating equipment and construction of the powerplant.

McGee Creek Project, Oklahoma. - A budget of $7.8 million is requested for the McGee Creek Project in southeastern Oklahoma. Land acquisition and construction of access roads will be continued.

North Loup Division, Nebraska. - This division requires $14.0 million to complete work on the Geranium Canal and lateral system which will provide irrigation service to 10,940 acres. Work is scheduled to continue on Davis Creek Dam, Scotia Canal and Lateral System, and purchase of operating equipment. Contracts will be awarded for construction of a fish hatchery at Calamus Dam and for initial fish stocking at Calamus Reservoir.

San Luis Valley Project, Closed Basin Division, Colorado. - A budget of $12.6 million is requested for the San Luis Valley Project, Closed Basin Division. The project will reclaim and deliver to the Rio Grande River water now being non-beneficially consumed within the basin. The funds are required to continue land acquisition and construct canals, pipeline laterals, and related facilities required for water salvage.

WEB Rural Water Development Project, South Dakota. - The funding request of $21.5 million allows the WEB Water Development Association to continue planning, designing, and constructing the project which will supply water from Lake Oahe for domestic use to rural residents and towns in a service area covering 5,200 square miles in north-central South Dakota. The Bureau of Reclamation will continue to provide oversight in review of plans and designs.

Yakima Fish Passage and Protective Facilities. - The amount included for fish passage facilities is $13.4 million, of which $1.3 million will be provided by Bonneville Power Administration. Construction of facilities will be completed at six sites and initiated at seven sites.

Table 1

Construction Program
NEW CONTRACTS AWARDS IN EXCESS OF $1 MILLION TOTAL ESTIMATED COST
(Dollars in thousands)

Type of Work and Project	TEC of major contracts	FY 1987
Boulder Canyon Project (Arizona-Nevada)		
Elevator Shaft and Tour Galleries	$ 6,000	$ 3,500
Roadway Realignment	1,800	1,000
Brantley Project (New Mexico)		
Construct Recreation Facilities Brantley	2,433	55
Relocate County Roads	1,000	676
Buffalo Bill Dam Modifications (Wyoming)		
North Fork Impoundment Dike	2,960	2,100
Modify Buffalo Bill Dam and Spillway	12,080	4,000
Shoshone Canyon Conduit Modifications	9,502	2,000
Central Arizona Project, Non-Indian Distribution (Arizona)		
Phase II Pipelines QCID	5,580	5,580
Block 1 Laterals HIDD	3,959	3,959
O&M Facility and Equipment HIDD	1,421	1,066
West Distribution System Unit 2 MSIDD	5,765	5,765
West Distribution System Unit 3 MSIDD	3,299	1,839
East Main Canal MSIDD	12,623	2,514
East Distribution System Unit 1 MSIDD	5,543	1,012
East Distribution System Unit 2 MSIDD	5,086	2,835
Block 2 Laterals HIDD	2,110	2,110
Pumping Plants and Pipelines HIDD	1,401	500
Central Main Canal CAIDD	10,735	35
Central Distribution System Unit 1 CAIDD	4,300	300
Central Distribution System Unit 4 CAIDD	4,300	506

Construction Program
NEW CONTRACTS AWARDS IN EXCESS OF $1 MILLION TOTAL ESTIMATED COST
(Dollars in thousands)

Type of Work and Project	TEC of major contracts	FY 1987
Grand Coulee Third Powerplant (Washington)		
Engineering Building	$ 2,800	$ 540
Protect Control Cable Tunnels and Shaft	3,800	500
500-Kilovolt Cable Tunnels	2,000	500
North Loup Division (Nebraska)		
Fish Hatchery	5,940	100
San Luis Valley, Closed Basin (Colorado)		
Construct Stage 5 Laterals	3,100	82
Construct Electrical System Phase II	1,043	274
San Luis Lake Pumping Plant	1,018	772
Trinity River Restoration Program (California)		
Phase I	3,500	1,840
Yakima, Fish Passage and Protective Facilities (Washington)		
Fish Screens - Easton	2,800	1,000
Boise, Arrowrock Dam (Idaho)		
Modify Outlet Works - Install Gates	4,220	850
Colorado River Front Work/Levee System (Arizona-Nevada-Calif.)		
Main Outlet Drain Extension - Repair Lining	1,200	100
Parker Bankline, Section 2, Lapaz Quarry	1,200	400
Casitas Dam, Ventura River Project (California)		
Modification, Casitas Dam	1,830	10
Minidoka, Jackson Lake Dam (Idaho)		
Stabilize Dam - Phase II	46,820	6,500
Furnish outlet gates	1,500	1,500

Construction Program
NEW CONTRACTS AWARDS IN EXCESS OF $1 MILLION TOTAL ESTIMATED COST
(Dollars in thousands)

Type of Work and Project	TEC of major contracts	FY 1987
Newton Project (Utah)		
Service and Emergency Spillway Modification	1,716	1,716
Seedskadee Project (Wyoming)		
Fontenelle Dam Remedial Work	40,900	4,377
Title 1, Division (Arizona)		
Program Master Supervisory Control System	5,513	1,969
Sludge Pumping Plant Pipeline	4,041	2,526
Yuma Desalting Plant - Materials for Testing	1,338	446
Railroad Track Rehabilitation	1,516	1,516
CRBSCP, Grand Valley Unit (Colorado)		
West Government Highline Canal	4,000	2,087
West End Laterals	3,916	620
CRBSCP, Paradox Valley Unit (Colorado)		
Pipeline, Road, and Powerline	3,000	1,667
Deep Well Testing Facilities	1,250	208
Bonneville Unit (Utah)		
Relocate Highway 40-189	96,164	22,221
Alpine Aqueduct, Section 2	3,090	181
Syar Tunnel Access Road	2,140	214
Dolores Project (Colorado)		
Powerplant - McPhee Dam	1,713	745
Pleasantview-Ruin-Hovenweep - Pumps and Laterals	12,000	4,286

Construction Program
NEW CONTRACTS AWARDS IN EXCESS OF $1 MILLION TOTAL ESTIMATED COST
(Dollars in thousands)

Type of Work and Project	TEC of major contracts	FY 1987
Central Arizona Project (Arizona-New Mexico)		
Brawley and San Xavier Pumping Plant	51,787	1,490
Tucson Power Control Cables for Reaches, 1, 2, and 3	2,341	493
Tucson Reach 5 - Prime	11,046	5,814
Tucson Pipeline - Prime	21,276	86
Waddell Dam Stage I - Prime	34,850	9,182
Waddell West Wing Substation Modification	2,000	417
Waddell Canal Pumping-Generating Structure	52,182	791
Roosevelt - Highway 88 Bridge	11,890	3,756
Roosevelt - Highway 88 Apache Trail Relocation	4,600	920
Roosevelt - Exploration Tunnels Pullout Tests	4,000	3,406
Tab - 115-Kilovolt Rattlesnake	2,969	1,732

The documents on the following pages, organized by component, provide the details of the construction program:

Construction components	Method of Financing table	Summary Statements
Construction and Rehabilitation	155	164
Colorado River Basin Salinity Control Projects	158	
Upper Colorado River Basin Fund	158	382
Recreational and Fish and Wildlife Facilities	159	443
Colorado River Basin Project	160	449

SUMMARY OF CONSTRUCTION PROGRAM

Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Components	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied 1/ revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied 1/ revenue	Total obligations
CONSTRUCTION AND REHABILITATION	$272,195	$63,689	$ 6,721	$342,605	$339,631	$11,989	$351,620
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS	23,358	12,834	---	36,192	50,839	---	50,839
UPPER COLORADO RIVER BASIN FUND	77,062	6,642	5,000	88,704	110,929	4,235	115,164
RECREATIONAL AND FISH AND WILDLIFE FACILITIES	5,705	751	---	6,456	12,765	---	12,765
COLORADO RIVER BASIN PROJECT	143,380	15,742	---	159,122	145,596	8,000	153,596
SUBTOTAL - CONSTRUCTION PROGRAM . .	$521,700	2/ $99,658	$11,721	$633,079	$659,760	$24,224	$683,984
NATIONAL PARK SERVICE CARRYOVER . .	---	3	---	3	---	---	---
GENERAL REDUCTION DUE TO SLIPPAGE, SAVINGS, and CARRYOVER BALANCES. .	---	---	---	---	-83,001	---	-83,001
SUBTOTAL - CONSTRUCTION PROGRAM . .	521,700	2/ $99,661 3/	$11,721	$633,082	$576,759	$24,224	$600,983
REDUCTION FOR PUBLIC LAW 99-177 . .	- 22,433	---	---	- 22,433	---	---	---
TOTAL - CONSTRUCTION PROGRAM	$499,267	$99,661	$11,721	$610,616	$576,759	$24,224	$600,983

1/ Details of the non-Federal advances and other applied revenue in the Construction Program appear on the following pages.
2/ Underfinancing of $89,101,000 has been distributed to the various projects.
3/ Excludes prior year funds of $8,087,122 for Teton claims.

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Construction and Rehabilitation							
Preconstruction Activity:							
Central Valley Project, Grass Valley Creek Debris Dam, California	$ ---	$ 297	$ ---	$ 297	$ ---	$ ---	$ ---
Colorado River Bridge Crossing . .	---	523	---	523	500	---	500
Pick-Sloan Missouri Basin Program:							
Belle Fourche Unit, South Dakota.	---	537	---	537	---	---	---
Buffalo Bill Dam Modification, Wyoming	---	513	---	513	---	---	---
Narrows Unit, Colorado	500	33	---	533	---	---	---
Spring Creek Toxicity Control, California	---	---	---	---	20	---	20
Upper Snake River Division, Salmon Falls Project	---	20	---	20	---	---	---
Subtotal - Preconstr. Activity	500	1,923	---	2,423	520	---	520
Construction:							
Boulder Canyon Project-Improvements, Arizona-Nevada	---	1,806	---	1,806	5,760	---	5,760
Brantley Project, New Mexico . . .	27,000	435	---	27,435	23,650	---	23,650
Central Arizona Project, Non-Indian Irrigation Systems, Arizona-Calif.-New Mexico-Nevada-Utah	22,645	15,697	---	38,342	57,174	---	57,174

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Construction and Rehabilitation							
Construction (continued)							
Central Valley Project, California							
Auburn-Folsom South Unit	1,500	2,155	---	3,655	1,000	---	1,000
Miscellaneous Project Programs. .	1,063	952	---	2,015	372	---	372
Sacramento River Division	1,362	4,159	---	5,521	1,060	---	1,060
San Felipe Division	35,497	5,887	---	41,384	10,642	---	10,642
San Luis Unit	12,490	2,881	641	16,012	12,172	578	12,750
Trinity River Restoration Program	500	---	---	500	4,650	---	4,650
Subtotal - Central Valley Project	$ 52,412	$ 16,034	$ 641	$ 69,087	$ 29,896	$ 578	$ 30,474
Chief Joseph Dam, Oroville-Tonasket Unit, Washington	6,525	---	---	6,525	1,725	---	1,725
Columbia Basin Project, Washington							
Irrigation Facilities	6,035	25	---	6,060	7,110	---	7,110
Third Powerplant	12,599	222	---	12,821	23,890	---	23,890
Subtotal - Columbia Basin Project	$ 18,634	$ 247	$ ---	$ 18,881	$ 31,000	$ ---	$ 31,000
Headgate Rock Hydroelectric Project, Arizona	---	8,300	---	8,300	6,800	---	6,800
McGee Creek Project, Oklahoma . . .	6,645	263	---	6,908	7,755	---	7,755
Nueces River Project, Texas	4,834	194	---	5,028	---	---	---

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Construction and Rehabilitation							
Construction (continued)							
Pick-Sloan Missouri Basin Program:							
Belle Fourche Unit, South Dakota	---	---	---	---	3,900	---	3,900
Buffalo Bill Dam Modification, Wyoming	---	5,170	5,180	10,350	13,400	10,466	23,866
Garrison Diversion Unit, North Dakota-South Dakota	23,851	---	---	23,851	18,000	---	18,000
North Loup Division, Nebraska	24,249	503	---	24,752	14,035	55	14,090
O'Neill Unit, Nebraska	240	283	---	523	1,381	---	1,381
Subtotal - Pick-Sloan Missouri Basin Program	$48,340	$ 5,956	$ 5,180	$59,476	$ 50,716	$10,521	$ 61,237
San Luis Valley, Closed Basin, Colorado	9,785	494	---	10,279	12,594	---	12,594
Velarde Community Ditch Project, New Mexico	2,666	4	---	2,670	---	---	---
WEB Rural Water Development Project, South Dakota	16,925	20	800	17,745	21,480	800	22,280
Yakima Fish Passage and Protection Facilities, Washington	2,289	2,997	---	5,286	12,050	---	12,050
Drainage and Minor Construction Program	26,907	5,400	---	32,307	35,259	---	35,259
Rehabilitation and Betterment of Existing Projects	5,493	652	---	5,145	3,647	--	3,647
Safety of Dams Program	20,595	3,267	100	23,962	39,515	90	39,605
Subtotal - Construction and Rehabilitation	$272,195	$63,689	$ 6,721	$342,605	$339,631	$11,989	$351,620

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Colorado River Basin Salinity Control Projects							
Construction:							
Title I Division:							
Colorado River Salinity, Measures below Imperial Dam . . .	$ 20,000	$ 5,400	$ ---	$ 25,400	$ 26,427	$ ---	$ 26,427
Title II Division:							
Salinity Control Units:							
Grand Valley Unit, Colorado . . .	2,241	1,775	---	4,016	12,055	---	12,055
Las Vegas Wash Unit, Nevada . . .	---	1,404	---	1,404	75	---	75
Paradox Valley Unit, Colorado . .	1,117	4,255	---	5,372	12,282	---	12,282
Subtotal - Title II	$ 3,358	$ 7,434	$ ---	$ 10,792	$ 24,412	$ ---	$ 24,412
Subtotal - Colorado River Basin Salinity Control Projects	$ 23,358	$ 12,834	$ ---	$ 36,192	$ 50,839	$ ---	$ 50,839
Upper Colorado River Basin Fund							
Preconstruction Activity:							
Central Utah Project, Uintah Unit, Utah	250	---	---	250	100	---	100
Subtotal - Preconstr. Activity	$ 250	$ ---	$ ---	$ 250	$ 100	$ ---	$ 100
Construction:							
Animas-LaPlata Project, Colorado .	---	250	---	250	1,000	4,235	5,235
Central Utah Project:							
Bonneville Unit, Utah	44,804	3,069	5,000	52,873	83,793	---	83,793
Upalco Unit, Utah	2,612	1,683	---	4,295	50	---	50
Subtotal - Central Utah Project	$ 47,416	$ 4,752	$ 5,000	$ 57,168	$ 83,843	$ ---	$ 83,843

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Upper Colorado River Basin Fund (Continued)							
Construction: (Continued)							
Dallas Creek, Colorado	5,604	539	---	6,143	4,286	---	4,286
Dolores, Colorado	22,576	144	---	22,720	20,375	---	20,375
Drainage and Minor Construction Program	$ 1,216	$ 957	$ ---	$ 2,173	$ 1,325	$ ---	$ 1,325
Subtotal - Construction	$ 76,812	$ 6,642	$ 5,000	$ 88,454	$ 110,829	$ 4,235	$115,064
Subtotal - UCRBF	$ 77,062	$ 6,642	$ 5,000	$ 88,704	$ 110,929	$ 4,235	$115,164
Recreational and Fish and Wildlife Facilities							
Recreational facilities	4,550	644	---	5,194	8,747	---	8,747
Fish and wildlife facilities	1,155	107	---	1,262	4,018	---	4,018
Subtotal - R&F&WLF	$ 5,705	$ 751	$ ---	$ 6,456	$ 12,765	$ ---	$ 12,765

CONSTRUCTION PROGRAM
Method of Financing FY 1986 and FY 1987
(In thousands of dollars)

Project and State	Fiscal year 1986				Fiscal year 1987		
	Allocation of funds	Prior year funds applied	Non-Federal advances and other applied revenue	Total Funds Available	Allocation of funds	Non-Federal advances and other applied revenue	Total obligations
Colorado River Basin Project Construction:							
Central Arizona Project[1], Arizona-California-New Mexico-Nevada-Utah	$143,380	$ 15,742	$ ---	$159,122	$145,596	$ 8,000	$153,596
Subtotal - Colorado River Basin Project	$143,380	$ 15,742	$ ---	$159,122	$145,596	$ 8,000	$153,596
Subtotal - Construction Program	$521,700	$ 99,658	$ 11,721	$633,079	$659,760	24,224	$683,984
National Park Service Carryover . .	---	3	---	3	---	---	---
General Reduction due to Slippage, Savings, and Carryover Balances. . .	---	---	---	---	-83,001	---	-83,001
Subtotal - Construction	$521,700	$ 99,661	$ 11,721	$633,082	$576,759	24,224	$600,983
Reduction for Public Law 99-177 . . .	- 22,433	---	---	- 22,433	---	---	---
TOTAL - CONSTRUCTION PROGRAM	$499,267	$ 99,661	$ 11,721	$610,616	$576,759	$ 24,224	$600,983

[1] See page 155 for Non-Indian Distribution System portion of the Central Arizona Project.

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Construction Program

Project	Enacted BA FY 1986 1/	Application of P.L. 99-177	Adjusted FY 1986
BOULDER CANYON PROJECT	0	0	0
BRANTLEY PROJECT	27,000,000	1,161,000	25,839,000
CENTRAL ARIZONA PROJECT	22,645,000	973,735	21,671,265
AUBURN-FOLSOM SOUTH UNIT, CVP	1,500,000	64,500	1,435,500
MISC PROJECT PROGRAMS, CVP	1,063,000	45,709	1,017,291
SACRAMENTO RIVER DIVISION, CVP	1,362,000	58,566	1,303,434
SAN FELIPE DIVISION, CVP	35,497,000	1,526,371	33,970,629
SAN LUIS UNIT, CVP	12,490,000	537,070	11,952,930
TRINITY RIVER RESTORATION PRGM	500,000	21,500	478,500
CENTRAL VALLEY PROJECT	52,412,000	2,253,716	50,158,284
CHIEF JOSEPH,OROVILLE-TONASKET	7,025,000	302,075	6,722,925
COLUMBIA BASIN, IRRIG FACILS	6,035,000	259,505	5,775,495
GRAND COULEE THIRD POWERPLANT	9,994,000	429,742	9,564,258
COLUMBIA BASIN PROJECT	16,029,000	689,247	15,339,753
MC GEE CREEK PROJECT	6,645,000	285,735	6,359,265
NUECES RIVER PROJECT	4,834,000	207,862	4,626,138
GARRISON DIVERSION UNIT, P-S	28,000,000	1,204,000	26,796,000
NORTH LOUP DIVISION, P-SMBP	24,249,000	1,042,707	23,206,293
O'NEILL UNIT, P-SMBP	240,000	10,320	229,680
PICK-SLOAN MISSOURI BASIN PRGM	52,489,000	2,257,027	50,231,973
SAN LUIS VALLEY, CLOSED BASIN	9,785,000	420,755	9,364,245
VELARDE COMMUNITY DITCH PROJ	2,666,000	114,638	2,551,362
WEB RUR[illegible] WTR DEVELOPMENT PROJ	16,925,000	727,775	16,197,225
YAKIMA, [illegible]ISH PASG/PRTCV FACILS	353,000	15,179	337,821
REGULAR CONSTRUCTION	218,808,000	9,408,744	209,399,256

1/ Figures in this column reflect the assignment of the "Undistributed reduction based on anticipated delays" ($89,500,000) and "Application of unobligated funds from Teton Dam claims" ($14,000,000) within the Construction Program. Consequently some projects will show "0" where the assignment of such reductions is equal to the amount approved by Congress.

Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
ARBUCKLE PROJECT	430,000	18,490	411,510
BOISE, ARROWROCK DAM	300,000	12,900	287,100
BOISE, PAYETTE DIVISION	230,000	9,890	220,110
BOISE PROJECT	530,000	22,790	507,210
CHIEF JOSEPH, MANSON UNIT	15,000	645	14,355
CHIEF JOSEPH DAM PROJECT	15,000	645	14,355
COLO RIV FRONT WORK/LEVEE SYST	13,371,000	574,953	12,796,047
MB	220,000	9,460	210,540
MP	23,000	989	22,011
SW	84,000	3,612	80,388
CULTURAL RESOURCES ACTIVITIES	327,000	14,061	312,939
MISC ENGINEERING SERVICES	10,000	430	9,570
FRYINGPAN-ARKANSAS PROJECT	5,548,000	238,564	5,309,436
GILA PROJECT	997,000	42,871	954,129
KLAMATH PROJECT	1,822,000	78,346	1,743,654
MOUNTAIN PARK PROJECT	200,000	8,600	191,400
NEWLANDS PROJECT	53,000	2,279	50,721
PALMETTO BEND PROJECT	500,000	21,500	478,500
BOSTWICK DIVISION, P-SMBP	40,000	1,720	38,280
CANYON FERRY UNIT, P-SMBP	1,770,000	76,110	1,693,890
EAST BENCH UNIT, P-SMBP	50,000	2,150	47,850
FARWELL UNIT, P-SMBP	230,000	9,890	220,110
OAHE UNIT, P-SMBP	65,000	2,795	62,205
OWL CREEK UNIT, P-SMBP	50,000	2,150	47,850
RIVERTON UNIT, P-SMBP	270,000	11,610	258,390
PICK-SLOAN MISSOURI BASIN PRGM	2,475,000	106,425	2,368,575
REC FACILS AT EXISTING RESRVRS	172,000	7,396	164,604
ROBERT B. GRIFFITH WATER PROJ	50,000	2,150	47,850
WASHITA, FOSS DAM	0	0	0
WASHOE PROJECT	407,000	17,501	389,499
REGIONAL COMPLEX	0	0	0
TWIN FALLS CANAL COMPANY	0	0	0
DRAINAGE AND MINOR CONSTRUCT	26,907,000	1,157,001	25,749,999
CROOKED RIVER, OCHOCO IRRIG	0	0	0
OKANOGAN, OKANOGAN IRRIG DIST	1,357,000	58,351	1,298,649
SALT RIVER, ROOSEVELT WCD	0	0	0
SHOSHONE, HEART MOUNTAIN DIVN	1,000,000	43,000	957,000
SHOSHONE PROJECT	1,000,000	43,000	957,000
STRAWBERRY VALLEY PROJECT	1,720,000	73,960	1,646,040
SUN RIVER, FORT SHAW DIVISION	290,000	12,470	277,530
SUN RIVER PROJECT	290,000	12,470	277,530
UNCOMPAHGRE PROJECT	218,000	9,374	208,626
YAKIMA, YAKIMA-TIETON ID	660,000	28,380	631,620
YAKIMA PROJECT	660,000	28,380	631,620
REHABILITATION AND BETTERMENT	5,245,000	225,535	5,019,465

Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
NAVAJO UNIT, CRSP	2,536,000	109,048	2,426,952
DEPARTMENT DAM SAFETY PROGRAM	450,000	19,350	430,650
FRUITGROWERS DAM PROJECT	1,125,000	48,375	1,076,625
LEWISTON ORCHARDS PROJECT	600,000	25,800	574,200
MINIDOKA, JACKSON LAKE DAM	3,200,000	137,600	3,062,400
MINIDOKA PROJECT	3,200,000	137,600	3,062,400
HEART BUTTE UNIT, P-SMBP	760,000	32,680	727,320
PACTOLA DAM, RAPID VAL UNT,P-S	4,600,000	197,800	4,402,200
PICK-SLOAN MISSOURI BASIN PRGM	5,360,000	230,480	5,129,520
SALT RIVER, STEWART MT DAM	600,000	25,800	574,200
SALT RIVER, THEO ROOSEVELT DAM	4,000,000	172,000	3,828,000
SALT RIVER PROJECT	4,600,000	197,800	4,402,200
MODF REPORTS-PRECNSTR ACTIVITY	2,164,000	93,052	2,070,948
SEEDSKADEE PROJECT (CRSPP)	300,000	12,900	287,100
W. C. AUSTIN, ALTUS DAM	400,000	17,200	382,800
SAFETY OF DAMS PROGRAMS	20,735,000	891,605	19,843,395
NARROWS UNIT, P-SMBP	500,000	21,500	478,500
PICK-SLOAN MISSOURI BASIN PRGM	500,000	21,500	478,500
PRECONSTRUCTION ACTIVITY	500,000	21,500	478,500
CONSTRUCTION/REHABILITATION	272,195,000	11,704,385	260,490,615
CRBSCP, (TITLE 1, DIVISION)	20,000,000	860,000	19,140,000
COLO. RIV SALINITY-TITLE 1	20,000,000	860,000	19,140,000
CRBSCP, GRAND VALLEY UNIT	2,241,000	96,363	2,144,637
CRBSCP, LAS VEGAS WASH UNIT	0	0	0
CRBSCP, PARADOX VALLEY UNIT	1,117,000	48,031	1,068,969
COLO. RIV SALINITY-TITLE 2	3,358,000	144,394	3,213,606
COLORADO RIVER SALINITY CONTRL	23,358,000	1,004,394	22,353,606

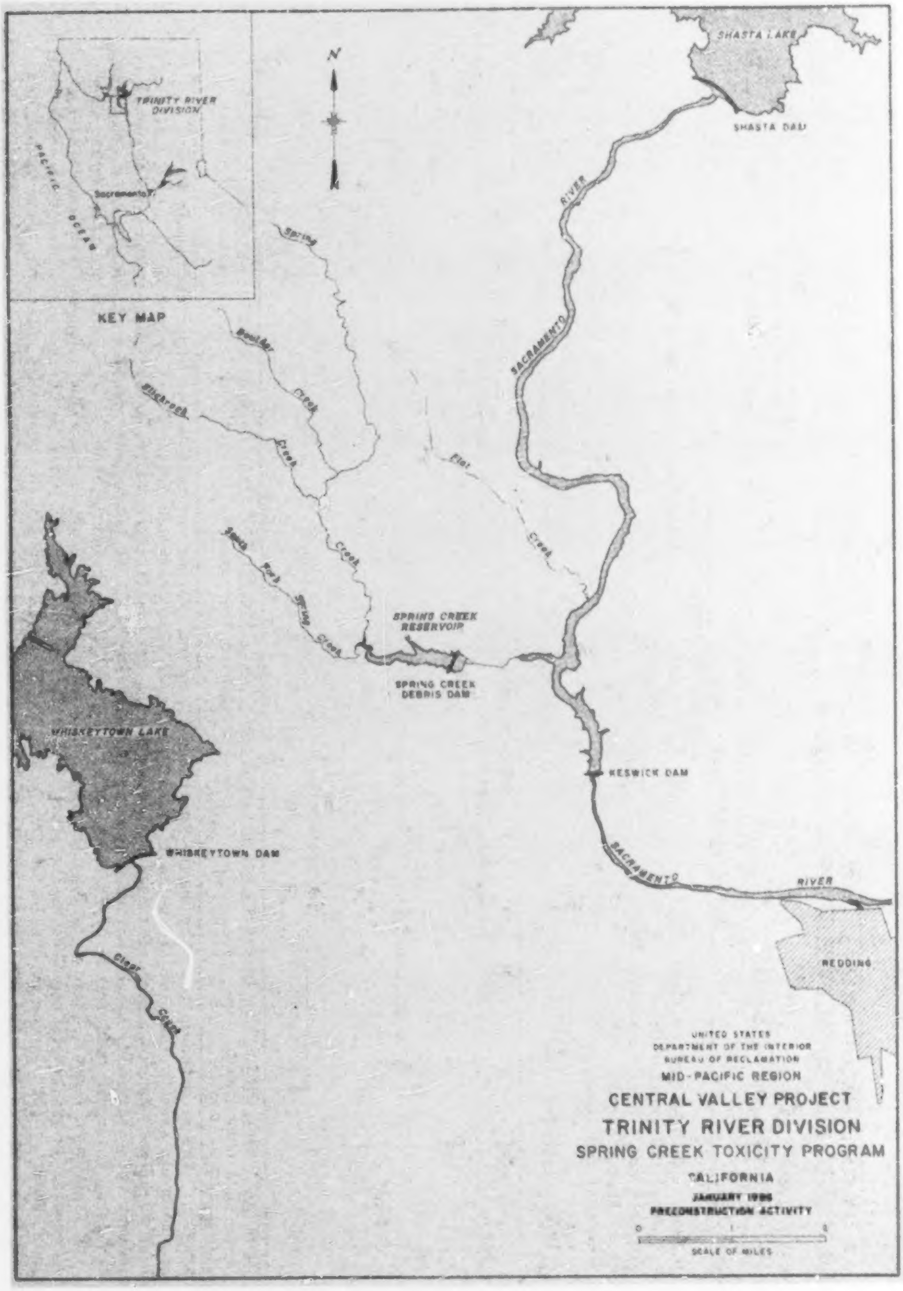
Project	Enacted BA FY 1986	Application of P.L. 99-177	Adjusted BA FY 1986
ANIMAS-LA PLATA PROJ (CRSPP)	0	0	0
CUP, BONNEVILLE UNIT (CRSPP)	44,804,000	1,926,572	42,877,428
CUP, JENSEN UNIT (CRSPP)	1,216,000	52,288	1,163,712
CUP, UPALCO UNIT (CRSPP)	2,612,000	112,316	2,499,584
CENTRAL UTAH PROJECT (CRSPP)	48,632,000	2,091,176	46,540,824
DALLAS CREEK PROJECT (CRSPP)	5,604,000	240,972	5,363,028
DOLORES PROJECT (CRSPP)	22,576,000	970,768	21,605,232
CRSP, REGULAR CONSTRUCTION	76,812,000	3,302,916	73,509,084
MODF/ADDN TO CMPLTD FACIL,CRSP	0	0	0
CRSP, DRAIN/MINOR CONSTRUCT	0	0	0
CUP, UINTAH UNIT (CRSPP)	250,000	10,750	239,250
CRSP, PRECONSTRUCTION PLAN	250,000	10,750	239,250
COLO RIVER STOR PROJ,SEC 5 C/R	77,062,000	3,313,666	73,748,334
CUP, BONNEVILLE UNIT (CRSPP)	1,155,000	49,665	1,105,335
CRSP, FISH/WILDLIFE (SEC 8)	1,155,000	49,665	1,105,335
CUP, BONNEVILLE UNIT (CRSPP)	611,000	26,273	584,727
DALLAS CREEK PROJECT (CRSPP)	2,392,000	102,856	2,289,144
DOLORES PROJECT (CRSPP)	1,547,000	66,521	1,480,479
CRSP, RECREATION (SEC 8)	4,550,000	195,650	4,354,350
COLO RIVER STOR PROJ, SEC 8	5,705,000	245,315	5,459,685
CENTRAL ARIZONA PROJECT	143,380,000	6,165,240	137,214,760
COLORADO RIVER BASIN PROJECT	143,380,000	6,165,240	137,214,760
CONSTRUCTION PROGRAM	521,700,000	22,433,000	499,267,000

CENTRAL VALLEY PROJECT
Repayable Investment of the United States
and Funds Returned to the treasury
September 30, 1985

Repayable Investment of the United States:		
Appropriation allocation for advance planning, construction, and operation and maintenance	$ 2,936,909,350	
Transfers of cost or property (net)	418,051,985	
Interest accrued on investment	189,021,278	
Interest during construction - capitalized	33,175,449	
Total investment		$3,577,158,062
Less nonreimburseble investment:		
Capital costs (estimated)	-380,521,698	
Expense	-61,462,377	
Total nonreimbursable		-441,984,075
Total repayable investment		$3,135,173,987
Funds Returned to the Treasury:		
Power operations	$ 562,404,363	
Water operations and miscellaneous	458,452,257	
Total funds returned to the Treasury		$1,020,856,620

COLORADO RIVER STORAGE PROJECT
Repayable Investment of the United States and Funds Returned to the Treasury
September 30, 1985

Repayable Investment of the United States:		
Appropriation allocations for preconstruction planning, construction, and for Recreational and Fish and Wildlife Activities	$2,350,410,941	
Transfer of Cost or Property (Net)	-2,173,495	
Interest During Construction	136,180,639	
Interest Accrued on Investment	237,270,734	
Total Investment		$2,721,688,819
Less Nonreimbursable Investment:		
Capital Costs	-$569,523,482	
Expense	-13,656,038	
Total Nonreimbursable Investment		$-583,179,520
Total Repayable Investment		$2,138,509,299
Funds Returned to the Treasury:		
Power Operations	$490,814,682	
Water Operations and Miscellaneous	29,311,189	
Total Funds Returned to the Treasury		$520,125,871


TRINITY RIVER DIVISION
PACIFIC OCEAN
Sacramento
KEY MAP
N
SHASTA LAKE
SHASTA DAM
SACRAMENTO RIVER
Spring Creek
Boulder Creek
Rich Creek
Flat Creek
South Fork Spring Creek
SPRING CREEK RESERVOIR
SPRING CREEK DEBRIS DAM
WHISKEYTOWN LAKE
WHISKEYTOWN DAM
KESWICK DAM
Clear Creek
REDDING
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
TRINITY RIVER DIVISION
SPRING CREEK TOXICITY PROGRAM
CALIFORNIA
JANUARY 1986
PRECONSTRUCTION ACTIVITY
0 1 2
SCALE OF MILES

PICK-SLOAN MISSOURI BASIN PROGRAM
Repayable Investment of the United States and Funds Returned to the Treasury
September 30, 1985

Appropriation Title: Construction Program
Construction and Rehabilitation

Repayable Investment of the United States:			
Bureau of Reclamation: 1/			
Appropriation allocations for advance planning, construction, and operation and maintenance	2/	$2,561,000,000	
Transfers of cost or property (net)	3/	59,000,000	
Interest during construction		45,000,000	
Interest accrued on investment		157,000,000	
Total investment			$2,822,000,000
Corps of Engineers (power function only):			
Cost of capital investment, including interest during construction		$ 582,000,000	
Operation and maintenance		181,000,000	
Interest accrued on investment		356,000,000	
Total investment			$1,119,000,000
Less nonreimbursable investment:			
Capital costs		$ -549,000,000	
Expense		-25,000,000	
Total nonreimbursable investment			$ -574,000,000
Total repayable investment			$3,367,000,000
Funds Returned to the Treasury:			
Power Operations:			
Applicable to costs of the Bureau of Reclamation		$ 985,000,000	
Applicable to costs of the Corps of Engineers		839,000,000	
Water operations and miscellaneous		66,000,000	
Total funds returned to the Treasury			$1,890,000,000

1/ Includes Western Area Power Administration, Department of Energy.
2/ Excludes $88,841,233 transferred to other bureaus of the Department of the Interior.
3/ Excludes $74,629,483 investigations costs transferred from Pick-Sloan Missouri Basin Program to General Investigations expense.

Appropriation Title: Construction Program
Construction and Rehabilitation

SUMMARY OF PRECONSTRUCTION ACTIVITY PROGRAM, FY 1986 AND FY 1987

Project	FY 1986 program	FY 1987 program
Belle Fourche Unit, P-SMBP, South Dakota	$ 537,000	$ ---
Buffalo Bill Dam Modification, P-SMBP, Wyoming	513,000	---
Colorado River Bridge Crossing, Arizona-Nevada	523,000	500,000
Grass Valley Creek Debris Dam, CVP, California	297,000	---
Narrows Unit, P-SMBP, Colorado	533,000	---
Spring Creek Toxicity Control, California	---	20,000
Upper Snake River, Salmon Falls Division, Idaho	20,000	---
TOTAL PROGRAM	$2,423,000	$ 520,000
Method of Financing:		
Appropriation available or required.	2,423,000	520,000
TOTAL FINANCING	$2,423,000	$ 520,000

Purpose of Program: During the Preconstruction Activity phase, work will consist of collecting final data, geologic work, material testing, and preparation of final designs and specifications. It also provides for negotiations with local interests leading to execution of repayment contracts prior to the initiation of construction. There will be no planning work performed in this phase but work under this activity will use data developed in the Advance Planning phase under the General Investigations appropriation.

Supporting statements for the preconstruction projects in the fiscal year 1987 are on pages 165 through 170.

REGION:
Lower Colorado

PROJECT DATA SHEET

PROJECT AND STATE: PRECONSTRUCTION ACTIVITY COLORADO RIVER BRIDGE CROSSING, ARIZONA-NEVADA	Completion Date: 1/	% Complete 0	Date 1/31/86

AUTHORIZATION:
Public Law 98-381, August 17, 1984

BENEFIT COST RATIOS		
Based on Direct: Benefits	Based on Total: Benefits	Date
1.1 3/	1.1 3/	10/1/86

LAND CERTIFICATION: None required

DEFINITE PLAN REPORT: None 2/

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 6/	$ 74,500,000	Allotments to September 30, 1985	$ 590,000
Total Federal Obligations (Other)		Allotments for FY 1986 4/	---
Net Property and Other Transfers:			
Federal Participation			
Non-Federal Participation		Allotments to Date	$ 590,000
Adjustment 5/	14,863,000	Allotments Required for FY 1987	500,000
Total to be Allocated	$ 89,363,000	Balance to Complete after FY 1987	$ 73,410,000

ALLOCATIONS	
Irrigation	$
Power	
M&I Water	
Recreation	
F&WL	
Flood Control	
Safety	89,363,000
Other	
Total	$ 89,363,000

REPAYMENT	
Amount Repaid by:	
Irrigators	$
Power	
M&I Water	
State-County	
Local Interests	
Deferred Use	
Nonreimbursable	
	$

AMOUNTS PER ACRE

Irrig. Invest/Acre $
Repayment of Investment per Acre:
By Irrigators
By Power Revenues

Payment Capacity per Acre-Foot: $ to $
Annual Charges:
O&M
Construction

STATUS OF REPAYMENT CONTRACT: Repayment requirements have not been determined.

STATUS OF NEPA COMPLIANCE: Determination of the appropriate NEPA compliance is scheduled for September 1986.

DESCRIPTION: The Colorado River Bridge Crossing is located approximately 1 mile downstream of Hoover Dam in Mohave County, Arizona, and Clark County, Nevada, and consists of Arizona and Nevada approach highways, a bridge spanning the Colorado River, and a visitor overview and viewpoint. The elimination of all through traffic and commercial vehicles from the crest of the dam will permanently relieve the hazardous traffic conditions that interfere with operation and maintenance of the dam, and will prevent accidents involving chemicals or hazardous waste that could result in loss of power generation and transmission. Serious safety problems for the workers and general public will be minimized. The driving distance between Las Vegas, Nevada, and Kingman, Arizona, will be reduced 1.4 miles, road grades will be reduced, and several dangerous curves will be eliminated.

PROJECT DATA SHEET - 2
COLORADO RIVER BRIDGE CROSSING, ARIZONA-NEVADA

OTHER INFORMATION: Funds to initiate preconstruction activities were included in the FY 1985 Budget Justifications for preconstruction work on the Boulder Canyon Project, and provided for in the FY 1985 Appropriation Act, P.L. 98-360.

Footnotes:

1/ Preconstruction activities are scheduled to be complete in FY 1988. Construction is estimated to require 4 years to complete.

2/ Special Reports: Resume of Studies on Colorado River Crossing Below Hoover Dam (dated January 1972); 1983 Analysis of Colorado River Crossing Below Hoover Dam - Draft Report (dated June 1983).

3/ The benefit-cost ratio was computed using the authorized interest rate of 8.625 percent.

4/ No appropriation was requested for FY 1986. Prior year funds will be used in FY 1986 to continue preconstruction activities.

5/ Represents interest during construction which has been included under the assumption that the project will be reimbursable.

6/ Construction of bridge is authorized under Public Law 98-381 which specified "This bridge shall not be a part of the Boulder Canyon Project and shall neither be funded nor repaid from the Colorado River Dam Fund or the Lower Colorado River Basin Fund." The Act did not specify an appropriation ceiling.

Appropriation Title: Construction Program
Construction and Rehabilitation

COLORADO RIVER BRIDGE CROSSING, ARIZONA-NEVADA

PRECONSTRUCTION ACTIVITY - 3

Summarized Financial Data:

Total estimated preconstruction program		$1,840,000
Obligations as of September 30, 1985	$ 67,000	
FY 1986 Program (using prior years funds)	523,000	
FY 1987 Program	500,000	
Balance to complete after September 30, 1987	750,000	

Justification: The project will eliminate or greatly reduce existing hazardous traffic conditions caused by very heavy vehicular and pedestrian traffic on the dam itself. U.S. Highway 93, the most traveled route between Las Vegas, Nevada and Arizona and points southeast, crosses Hoover Dam. A very significant part of the traffic consists of heavy trucks carrying normal commerce, fuel, chemicals, and other hazardous materials. Both the east and west approaches to the dam are steep with a series of switchback curves terminating at the abutments. A truck accident at or near either abutment involving hazardous material would probably jeopardize one of the power plants or the reservoir. The dam attracts up to one million visitors per year. Available parking areas and normal routing to see the facilities, require the visitors to cross the dam back and forth through the heavy vehicular traffic, frequently bumper-to-bumper. The potential for vehicular/pedestrian accident is extremely high; near misses are observed almost daily.

FISCAL YEAR 1987

Work Proposed	Program
Preconstruction activities will continue.	$ 500,000

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE: PRECONSTRUCTION ACTIVITY, CENTRAL VALLEY PROJECT, TRINITY RIVER DIVISION, SPRING CREEK TOXICITY PROGRAM, CALIFORNIA	Completion Date: 1/	% Complete 1/	Date 1/31/86

		BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 84-386, August 12, 1955		Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION: None required 3/	DEFINITE PLAN REPORT: Scheduled for approval September 1989	2/	2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 6/	$ 700,000	Allotments to September 30, 1985	$ ---
Total Federal Obligations(Other)	700,000	Allotments for FY 1986	---
Net Property and Other Transfers:			
Federal Participation			
Non-Federal Participation		Allotments to Date	---
Adjustment		Allotments Required for FY 1987	20,000
Total to be Allocated	$ 1,400,000	Balance to Complete after FY 1987	$ 680,000

ALLOCATIONS 3/		REPAYMENT		AMOUNTS PER ACRE 5/	
Irrigation		Amount Repaid by:		Irrig. Invest/Acre	Payment Capacity per Acre-Foot:
Power		Irrigators		Repayment of Investment per Acre:	Annual Charges:
M&I Water		Power			
Recreation		M&I Water		By Irrigators	O&M
F&WL 4/	1,400,000	State-County		By Power Revenues	Construction
Flood Control		Local Interests			
		Deferred Use			
Other		Nonreimbursable 4/	1,400,000		
Total	$ 1,400,000		$ 1,400,000		

STATUS OF REPAYMENT CONTRACT: In accordance with P.L. 84-386, all costs incurred shall be nonreimbursable.

STATUS OF NEPA COMPLIANCE: Projectwide final draft scheduled to Environmental Protection Agency, March 1989, final, September 1989.

DESCRIPTION: The area consists of the Spring Creek and Flat Creek Basins, as well as the upper Sacramento River. The Sacramento River Area consists of the areas from the mouths of Flat Creek and Spring Creek to Red Bluff Lake; a distance of about 60 miles. Mapping, geologic investigations, design and specification work, environmental studies and public involvement activities will be accomplished leading to solutions which might include erection of additional toxic waste storage dams, enlargement of Spring Creek Debris Dam, construction of holding ponds, or diversion of upper Spring Creek into the Flat Creek Basin. These solutions are being studied in conjunction with the Environmental Protection Agency's (EPA) remedial investigation and feasibility study of the Iron Mountain Mine, which is the source of the toxic contamination. Under an interagency Memorandum of Understanding, EPA will identify the most cost effective clean-up program for the Iron Mountain site and the Bureau will implement that part of the program dealing with water management.

PROJECT DATA SHEET - 2

CENTRAL VALLEY PROJECT
Trinity River Division
Spring Creek Toxicity Control Program, California

Footnotes:

1/ Preconstruction work is scheduled to complete in FY 1989.

2/ Benefit-cost analysis cannot be applied directly in determining a solution for minimizing the risk of toxic concentrations of heavy metals reaching the Sacramento River.

3/ Not presented in FY 1986 Budget Justifications.

4/ Public Law 84-386 includes provision that all project costs will be nonreimbursable for insuring the preservation and propagation of fish and wildlife. However, these costs may be funded through the Comprehensive Environmental Response, Compensation and Liability Act.

5/ Not applicable.

6/ Appropriations authorized are $273,174,000 (October 1986). This authorization is adequate to cover this project as currently proposed. The comparable Federal obligation is $264,920,747.

Appropriation Title: Construction Program
Construction and Rehabilitation

SPRING CREEK TOXICITY PROGRAM, CALIFORNIA
PRECONSTRUCTION ACTIVITY

Summarized Financial Data:

Total estimated preconstruction program		$ 700,000
Obligations as of September 30, 1985	$ --	
FY 1986 Program.	--	
FY 1987 Program.	20,000	
Balance to complete after September 30, 1987	680,000	

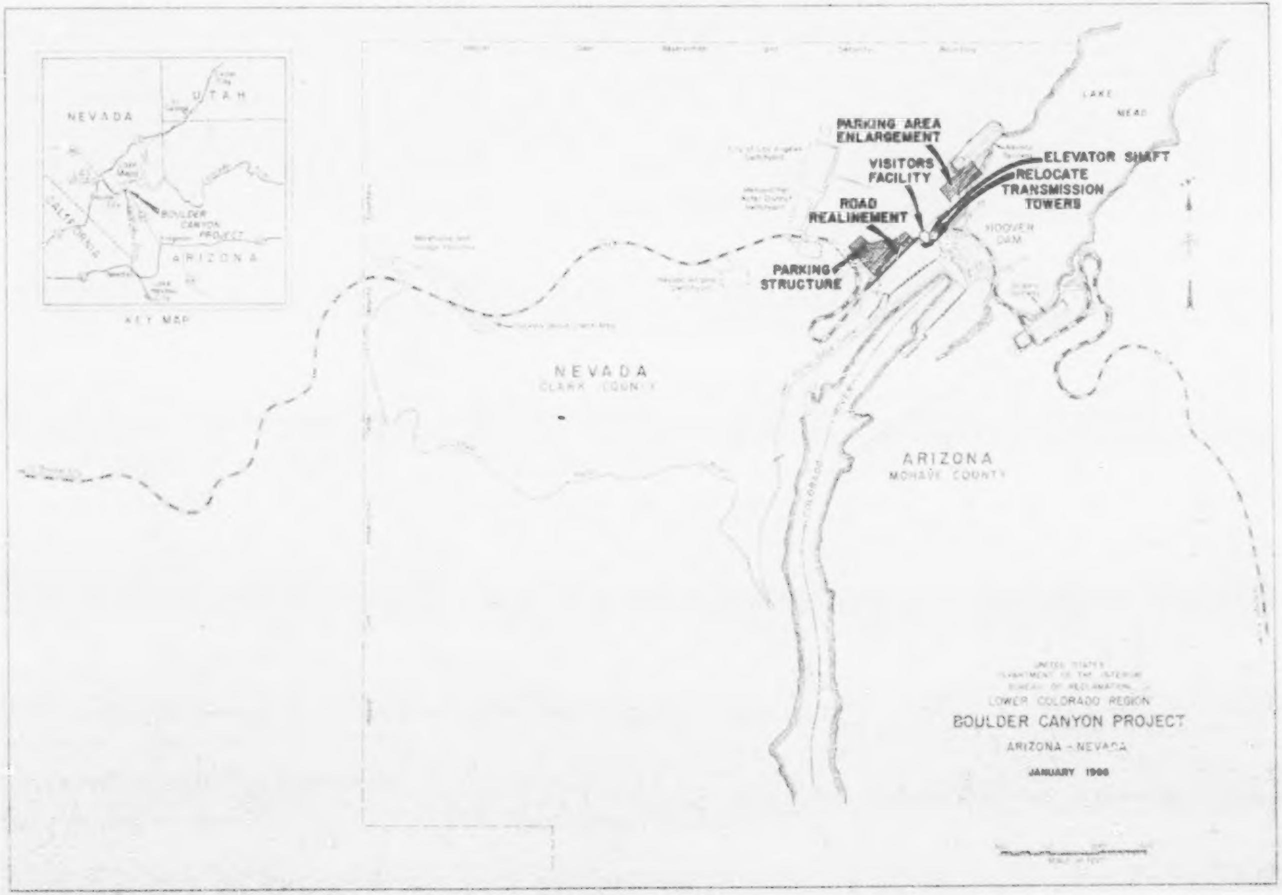
Justification: The area consists of the Spring Creek and Flat Creek Basins, as well as the upper Sacramento River. the Sacramento River area consists of the areas from the mouths of Flat Creek and Spring Creek to Red Bluff Lake, a distance of about 60 miles. In cooperation with the Environmental Protection Agency, mapping, geologic investigations, design and specification work, environmental studies and public involvement activities will be accomplished leading to solutions which might include erection of additional toxic waste storage dams, enlargement of Spring Creek Debris Dam, construction of holding pounds, or diversion of upper Spring Creek into the Flat Creek Basin.

FISCAL YEAR 1987

Work Proposed

Spring Creek Toxicity Program, California	Program
Provides for mapping, geologic investigations, design and specification work, environmental studies, and public involvement activities to determine a cost-effective solution for minimizing the risk of toxic concentrations of heavy metals reaching the Sacramento River.	$ 20,000

1/ Preconstruction work is scheduled to be completed in fiscal year 1989.

NEVADA
UTAH
CALIFORNIA
ARIZONA
BOULDER CANYON PROJECT
KEY MAP
LAKE MEAD
PARKING AREA ENLARGEMENT
VISITORS FACILITY
ELEVATOR SHAFT
RELOCATE TRANSMISSION TOWERS
ROAD REALINEMENT
HOOVER DAM
PARKING STRUCTURE
NEVADA
CLARK COUNTY
ARIZONA
MOHAVE COUNTY
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
BOULDER CANYON PROJECT
ARIZONA – NEVADA
JANUARY 1966

REGION:
LOWER COLORADO

PROJECT DATA SHEET

PROJECT AND STATE:
BOULDER CANYON PROJECT, ARIZONA-NEVADA

Completion Date	$ Complete	Date
1990 1/	0	1/31/86

AUTHORIZATION: Public Law 70-642, December 21, 1928;
Public Law 76-756, July 19, 1940; and Public Law 98-381, August 17, 1984

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
0 2/	0 2/	10/1/86

LAND CERTIFICATION:
None Required

DEFINITE PLAN REPORT:
3/

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 8/	$ 35,457,000	Allotments to September 30, 1985	$ 2,795,000
Total Federal Obligations (Other)		Allotments for FY 1986	---
Net Property and Other Transfers:			
Federal Participation 4/	-50,000		
Non-Federal Participation		Allotments to Date	$ 2,795,000
Adjustment 5/	12,549,000	Allotments Required for FY 1987	5,760,000
Total to be Allocated	$ 47,956,000	Balance to Complete after FY 1987	$ 26,902,000

ALLOCATIONS 6/	
Irrigation	$
Power	47,956,000
M&I Water	
Recreation	
F&WL	
Flood Control	
Navigation	
State-County	
Other	
Total	$ 47,956,000

REPAYMENT	
Amount Repaid by:	
Irrigators	$
Power 7/	47,956,000
M&I Water	
State-County	
Local Interests	
Deferred Use	
Nonreimbursable	
	$ 47,956,000

AMOUNTS PER ACRE

Irrig. Invest/Acre $
Repayment of Investment per Acre:
By Irrigators
By Power Revenues

Payment Capacity per Acre-Foot: $ to $
Annual Charges:
O&M
Construction

STATUS OF REPAYMENT CONTRACT: Repayment by customers under power contracts.

STATUS OF NEPA COMPLIANCE: Facility improvements - A Finding of No Significant Impact was filed on September 20, 1979.

DESCRIPTION: The project is located at Hoover Dam on the Colorado River between Clark County, Nevada and Mohave County, Arizona. Features of the Facility Improvements include enlargement of the Nevada spillway parking area, construction of a two-story parking structure west of the Nevada abutment, and a visitor service facility. The two parking facilities will consist of 520 spaces and increase available parking by 293 spaces. The visitor facility will provide two additional elevators and adits for improved control over public tours and improved safety for visitors and employees.

PROJECT DATA SHEET - 2
BOULDER CANYON PROJECT
ARIZONA-NEVADA

OTHER INFORMATION: Authorization to initiate preconstruction activities in advance of project authorization, within available construction funds, was provided in the Conference Report of the 1984 Supplemental Appropriations Act (Public Law 98-181). Funds to initiate construction were provided in the FY 1985 Supplemental Appropriations Act (Public Law 99-88). It has been determined that this project will have 100 percent cost-sharing through repayment, at current interest rates, by power users.

Footnotes:

1/ Change in completion date from FY 1989 as shown in the FY 1986 Budget Justifications, is due to contractor interference in a restricted work area.

2/ The uprating program was erroneously included in the benefit-cost ratio reported in the FY 1986 Justifications. No benefit-cost ratio is calculated for the Facility Improvements since the benefits are intangible.

3/ A special report on Facilitating Traffic Flow, Alleviating Safety Hazards, and Expediting Access (Facility Improvement Program) was submitted in September 1977.

4/ Represents estimated property transfer not reflected in previous submissions.

5/ Represents reimbursable interest during construction. The increase of $639,000 as shown in the FY 1986 Budget Justifications reflects the slippage in the completion date due to the increase in total estimated cost due to cost indexing.

PROJECT DATA SHEET - 3

BOULDER CANYON PROJECT
ARIZONA-NEVADA

Footnotes: (continued)

6/ Explanation of changes in allocations from the FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Power	$46,082,000	$47,956,000
Total	$46,082,000	$47,956,000

Explanation	Amount of Change
Cost indexing (Oct. 1985 to Oct. 1986)	$ 1,285,000
Reimbursable interest during construction	639,000
Consolidated expenditures and credits	-50,000
Total	$ +1,874,000

7/ The amount to be repaid by Power provided under contracts administered by the Western Area Power Administration.

8/ Appropriations authorized are $86,414,000 (October 1986). This authorization is adequate to cover this project as currently proposed. The authorized appropriation ceiling does not include completed works financed under original project authorization.

BOULDER CANYON PROJECT
ARIZONA-NEVADA

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM: 1/

Facility Improvements

Elevators and Shaft, Tour Galleries, and Visitors' Facilities

Elevators:
  Number of Elevators - 2
  Number of Passengers - 50
  Capacity - 10,000 pounds

Tour Galleries:
  Number - 2
  Length - 300 feet (est.)
Visitors' Facilities:
  Square Feet - 31,000

Shaft:
  Number - 1
  Length - 550 feet

Parking and Roadway Facilities

Parking:
  Number of Areas - 2
  Total Parking Spaces - 520

Relocations 2/

Roadway:
  Realignment - 0.2 mile
Transmission Towers:
  Relocate - 2

1/ Changes are to more nearly reflect the anticipated design of the project.

2/ Located on Federally-owned land.

Appropriation Title: Construction Program
Construction and Rehabilitation

BOULDER CANYON PROJECT
ARIZONA-NEVADA - 5

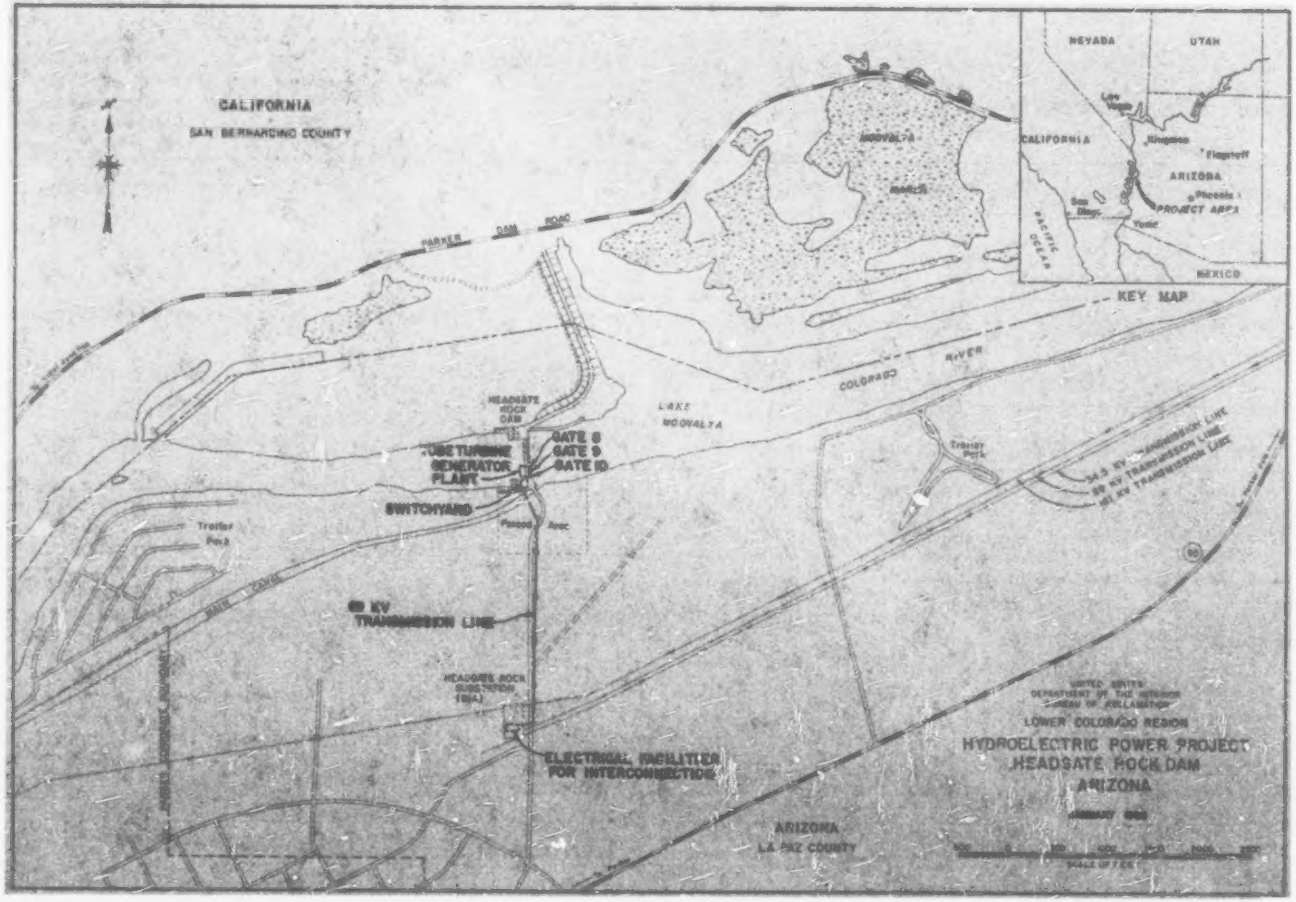
FISCAL YEAR 1987

Work Proposed	Program
Facility Improvements. - Collection of field data, and design and specification preparation will continue. Relocation of transmission lines will be completed, and work will be initiated on construction of the elevator shaft, tour galleries, and roadway relocation.	$ 5,760,000
TOTAL	$ 5,760,000

BOULDER CANYON PROJECT - ARIZONA-NEVADA

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Elevator Shafts/Tour Galleries	$8,680,000	$318,166	$111,834	$3,870,000	$4,380,000
Roadway Realignment	2,640,000	90,548	229,452	1,090,000	1,230,000
Transmission Lines/Tower	970,000	147,980	757,020	65,000	0
Parking Facilities	13,267,000	127,692	767,308	355,000	12,017,000
Visitor Facilities	9,850,000	113,098	1,371,902	382,000	7,983,000
Service Facilities, Depreciation, & Salvage.		119,110	70,890	(2,000)	(188,000)
Engineering and Design	(2,607,000)	(324,484)	(1,054,516)	(452,000)	(776,000)
Supervision and Administration	(3,960,000)	(473,000)	(1,583,000)	(738,000)	(1,166,000)
Total Construction Costs	$35,407,000	$916,594	$3,308,406	$5,760,000	$25,422,000
Total Project Costs	$35,407,000	$916,594	$3,308,406	$5,760,000	$25,422,000
Consolidated Expenditures and Credits	50,000	274	(274)	0	50,000
Total Expenditures	$35,457,000	$916,868	$3,308,132	$5,760,000	$25,472,000
Undelivered Orders	0	72,132	(72,132)	0	0
Total Obligations (Reclamation)	$35,457,000	$989,000	$3,236,000	$5,760,000	$25,472,000
Method of Financing:					
Appropriation available and required	$0	$0	$0	$5,760,000	$25,472,000
Application of prior year funds	0	0	1,806,000	0	0
Underfinancing	0	0	0	0	0


CALIFORNIA
SAN BERNARDINO COUNTY
N
PARKER DAM ROAD
MOOVALYA
LAKE MOOVALYA
COLORADO RIVER
HEADGATE ROCK DAM
TUBE TURBINE GENERATOR PLANT
GATE 8
GATE 9
GATE 10
SWITCHYARD
Fenced Area
Trailer Park
MAIN CANAL
69 KV TRANSMISSION LINE
HEADGATE ROCK SUBSTATION (BIA)
ELECTRICAL FACILITIES FOR INTERCONNECTION
34.5 KV TRANSMISSION LINE
69 KV TRANSMISSION LINE
161 KV TRANSMISSION LINE
95
ARIZONA
LA PAZ COUNTY
NEVADA
UTAH
Las Vegas
CALIFORNIA
Kingman
Flagstaff
ARIZONA
Phoenix
PROJECT AREA
San Diego
Yuma
PACIFIC OCEAN
MEXICO
KEY MAP
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
HYDROELECTRIC POWER PROJECT
HEADGATE ROCK DAM
ARIZONA
500
0
500
1000
1500
2000
2500
SCALE OF FEET

REGION:
Lower Colorado

PROJECT DATA SHEET

PROJECT AND STATE:
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

Completion Date	% Complete	Date
1989 1/	0	1/31/86

AUTHORIZATION:
Snyder Act of November 2, 1921 2/

LAND CERTIFICATION:
None Required

DEFINITE PLAN REPORT:
3/

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
1.4 4/	1.4 4/	10-1-86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation)	9/	$ 51,900,000
Total Federal Obligations(Other)		
Net Property and Other Transfers:		
Federal Participation 5/		1,387,000
Non-Federal Participation		
Adjustment 6/		10,953,000
Total to be Allocated		$ 64,240,000

Allotments to September 30, 1985	$ 8,300,000
Allotments for FY 1986	---
Allotments to Date	$ 8,300,000
Allotments Required for FY 1987	6,800,000
Balance to Complete after FY 1987	$ 36,800,000

ALLOCATIONS 7/	
Irrigation	$ 14,014,000
Power	50,226,000
M&I Water	
Recreation	
F&WL	
Flood Control	
Navigation	
State-County	
Other	
Total	$ 64,240,000

REPAYMENT	
Amount Repaid by:	
irrigators	$
Power 8/	64,240,000
M&I Water	
State-County	
Local Interests	
Deferred Use	
Nonreimbursable	
	$ 64,240,000

AMOUNTS PER ACRE

Irrig. Invest/Acre	$
Repayment of Investment per Acre:	
By Irrigators	
By Power Revenues	

Payment Capacity per Acre-Foot: $ to $
Annual Charges:
O&M
Construction

STATUS OF REPAYMENT CONTRACT: Reclamation will transfer the plant to the Bureau of Indian Affairs upon the completion of construction. Requirement for repayment will be determined by the Bureau of Indian Affairs.

STATUS OF NEPA COMPLIANCE: Finding of No Significant Impact was filed on August 22, 1980.

DESCRIPTION: This project is located at Headgate Rock Dam on the Colorado River between La Paz County, Arizona, and San Bernadino County, California, near Parker, Arizona. The project consists of constructing a powerplant and installing three turbine generating units and associated transmission facilities at the existing dam. The project will provide for a a total of 19,500 kilowatts of capacity and an annual average production of 86.5 million kilowatt-hours of energy for irrigation and pumping and other uses on the Colorado River Indian Reservation.

PROJECT DATA SHEET - 2
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

OTHER INFORMATION: Funds to start preconstruction activities were appropriated to the Bureau of Indian Affairs in FY 1980. Funds to initiate construction were appropriated in FY 1985 Supplemental Appropriations Act (Public Law 99-88).

It has been determined that this project is being constructed under the Snyder Act. The project is being built in order to promote Indian self-determination.

Headgate Rock Dam was authorized under the River and Harbors Act of 1935. Construction was initiated by the Bureau of Indian Affairs in 1938. The dam was completed in 1941 to provide permanent diversion facilities for irrigation of up to 100,000 acres of land in Arizona on the Colorado River Indian Reservation. The powerplant is considered to be an extension of the Colorado River Indian Irrigation Project. Designs and specifications have been essentially completed. The cost of this work was reimbursed to Reclamation by the Bureau of Indian Affairs under a Memorandum of Understanding dated May 7, 1980. The present plan envisions construction responsibility, including funding, being fulfilled by the Bureau of Reclamation under a revised Memorandum of Understanding with the Bureau of Indian Affairs. Upon completion, the entire plant will be transferred to the Bureau of Indian Affairs for operation and maintenance and repayment.

Footnotes:

1/ The project is scheduled to be operational in 1989. This acceleration of 3 years from FY 1992 is due to revision in estimated fund requirements and adjustments in the construction schedule.

2/ Construction of a powerplant at Headgate Rock Dam by Reclamation is authorized under the Snyder Act of November 2, 1921, 42 Stat. 208.

3/ An Advanced Planning Report was submitted to and approved by the Bureau of Indian Affairs in June 1980. This report will serve as a Definite Plan Report.

4/ No change in the benefit cost ratios as presented in the FY 1986 Budget Justifications. The ratios were computed using the interest rate of 7.625 percent.

5/ Represents funds transferred to Reclamation by the Bureau of Indian Affairs for design and specifications prior to Reclamation's decision to seek funding for construction of this project.

6/ Represents reimbursable interest during construction of $10,953,000 for power. Increase was due to change in funding requirements and an error in calculation for the FY 1986 Budget Justifications.

PROJECT DATA SHEET - 3
HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA

Footnotes: (continued)

7/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 15,645,000	$ 14,014,000
Power	51,358,000	50,226,000
Total . . .	$ 67,003,000	$ 64,240,000

Explanation	Amount of Change
Indexing (Oct. 1985 to Oct. 1986)	$+1,660,000
Interest during construction	+3,437,000
Reanalysis of requirements for minor and noncontract costs	-1,960,000
Revised estimated contract values	-5,900,000
Total	$-2,763,000

8/ Upon completion, Reclamation anticipates transfer of the plant to the Bureau of Indian Affairs (BIA) for operation and maintenance and repayment. It will be the responsibility of BIA to implement its repayment policy.

9/ This project is authorized under the provisions of the Snyder Act which does not specify an appropriation ceiling.

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Headgate Rock Dam Powerplant

Three Generating Units - 6,500 kilowatts each

Transmission Line and Switchyard Additions

69-kilovolt Transmission Line - 0.6 mile

Appropriation Title: Construction Program
Construction and Rehabilitation

HEADGATE ROCK HYDROELECTRIC PROJECT, ARIZONA - 5

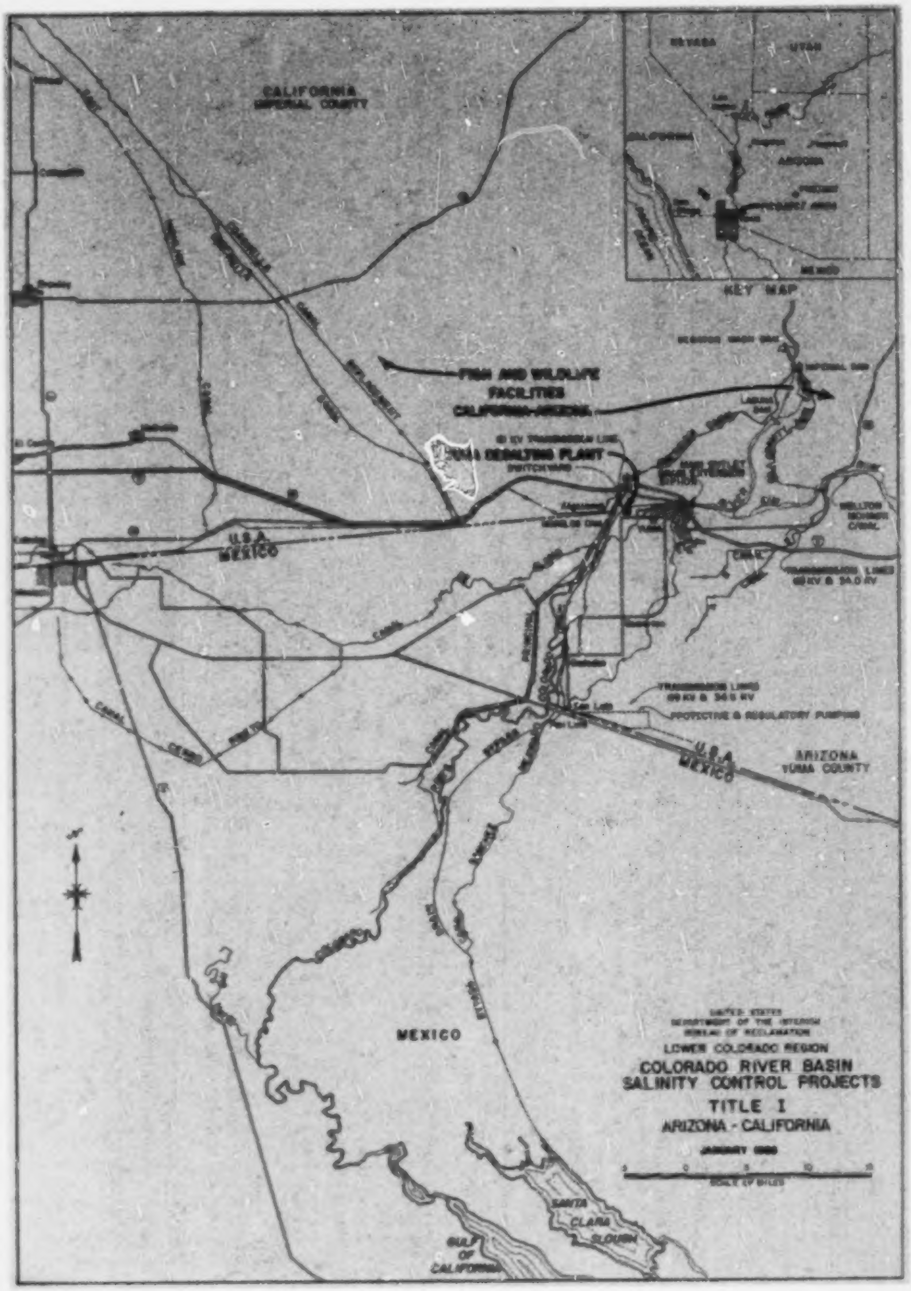
FISCAL YEAR 1987

Work Proposed	Program
Headgate Rock Dam Powerplant. - A contract for furnishing turbines, generators, and governors and a contract for powerplant/transmission lines will continue.	$ 6,800,000
TOTAL	$ 6,800,000

HEADGATE ROCK HYDROELECTRIC PROJECT - ARIZONA

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Headgate Rock Powerplant	$51,900,000	$0	$8,300,000	$6,800,000	$36,800,000
Engineering and Design	(1,534,000)	0	(632,000)	(60,000)	(842,000)
Supervision and Administration	(6,137,000)	0	(2,528,000)	(240,000)	(3,369,000)
Total Construction Costs	$51,900,000	$0	$8,300,000	$6,800,000	$36,800,000
Other Project Costs	1,387,000	1,387,000	0	0	0
Total Project Costs	$53,287,000	$1,387,000	$8,300,000	$6,800,000	$36,800,000
Consolidated Expenditures and Credits	(1,387,000)	(1,387,000)	0	0	0
Total Expenditures	$51,900,000	$0	$8,300,000	$6,800,000	$36,800,000
Total Obligations (Reclamation)	$51,900,000	$0	$8,300,000	$6,800,000	$36,800,000
Method of Financing:					
Appropriation available and required	$0	$0	$0	$6,800,000	$36,800,000
Application of prior year funds	0	0	8,300,000	0	0
Underfinancing	0	0	0	0	0


CALIFORNIA
IMPERIAL COUNTY
KEY MAP
NEVADA
UTAH
CALIFORNIA
ARIZONA
MEXICO
FISH AND WILDLIFE
FACILITIES
CALIFORNIA-ARIZONA
YUMA DESALTING PLANT
SWITCHYARD
CANAL
U.S.A.
MEXICO
WELLTON MOHAWK CANAL
TRANSMISSION LINES
69 KV & 34.5 KV
PROTECTIVE & REGULATORY PUMPING
ARIZONA
YUMA COUNTY
MEXICO
SANTA
CLARA
SLOUGH
GULF
OF
CALIFORNIA
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
COLORADO RIVER BASIN
SALINITY CONTROL PROJECTS
TITLE I
ARIZONA - CALIFORNIA
JANUARY 1980
5
0
5
10
15
SCALE OF MILES

REGION:
Lower Colorado

PROJECT DATA SHEET

PROJECT AND STATE: COLORADO RIVER BASIN SALINITY CONTROL PROJECTS-TITLE I DIVISION, ARIZONA-CALIFORNIA	Completion Date: 1989 1/	% Complete 60	Date 1/31/86

	BENEFIT COST RATIOS		
	Based on Direct Benefits	Based on Total Benefits	Date
AUTHORIZATION: Public Law 93-320, June 24, 1974, and Public Law 96-336, September 4, 1980			
LAND CERTIFICATION: None required ; DEFINITE PLAN REPORT: 3/	2/	2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 9/	$ 464,763,000	Allotments to September 30, 1985	$ 270,969,723
Total Federal Obligations (Other)		Allotments for FY 1986 8/	20,000,000
Net Property and Other Transfers:	-600,000		
Federal Participation			
Non-Federal Participation		Allotments to Date	$ 290,969,723
Adjustment		Allotments Required for FY 1987	26,427,000
Total to be Allocated	$ 464,163,000	Balance to Complete after FY 1987	$ 147,366,277

ALLOCATIONS 4/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	$ 45,938,000	Amount Repaid by:		Irrig. Invest/Acre $	Payment Capacity per Acre-Foot: $ to $
Power		Irrigators 6/	$ 45,938,000	Repayment of Investment per Acre:	Annual Charges:
M&I Water		Power		By Irrigators	O&M
Recreation		M&I Water		By Power Revenues	Construction
F&WL		State-County			
Flood Control		Local Interests			
Mexican Treaty	418,061,000	Deferred Use			
Other 5/	164,000	Nonreimbursable 7/	418,225,000		
Total	$ 464,163,000	Total	$ 464,163,000		

STATUS OF REPAYMENT CONTRACT: Repayment contract with the Coachella Valley County Water District for lining of the Coachella Canal was executed March 14, 1978, and validated June 30, 1978. 6/ 8/

STATUS OF NEPA COMPLIANCE: Title I - Projectwide final environmental impact statement was filed with the Council on Environmental Quality on June 18, 1975.

DESCRIPTION: The project is located in southwestern Arizona in Yuma County and in southeastern California in Imperial County. The project is for the enhancement and protection of the quality of water available in the Colorado River for the United States and the Republic of Mexico and to comply with the requirements of Minute No. 242 and obligations under the agreement with Mexico of August 30, 1973. The project will provide fish and wildlife mitigation measures.

PROJECT DATA SHEET - 2

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE I DIVISION
ARIZONA-CALIFORNIA

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1975.

Footnotes:

1/ Desalting Complex Unit- 73 million gallons per day fiscal year 1989 - balance to be completed as required.
Coachella Canal Unit - FY 1984
Protective and Regulatory Pumping Unit - 14 wells and associated features - FY 1979
7 wells and associated features - FY 1984
14 wells - balance to complete as required

The schedule for the completion of the Desalting Complex Unit has accelerated from FY 1990 to FY 1989 due to a significant savings on the completion contract. This allows for related contracts to be accelerated while keeping within previous budget limits.

2/ Assessment of the full beneficial impact of improving water quality as a result of this authorized project has not been made. Agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications.

3/ A Status Report on the Desalting Complex Unit was submitted in November 1977, the Definite Plan Report for the Coachella Canal Unit was approved May 30, 1979, and the Protective and Regulatory Pumping Unit Definite Plan Report was approved May 5, 1980. A special report on Reject Stream Replacement Studies was approved by the Commissioner on June 24, 1980.

PROJECT DATA SHEET - 3
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE I DIVISION
ARIZONA-CALIFORNIA

Footnotes: - (continued)

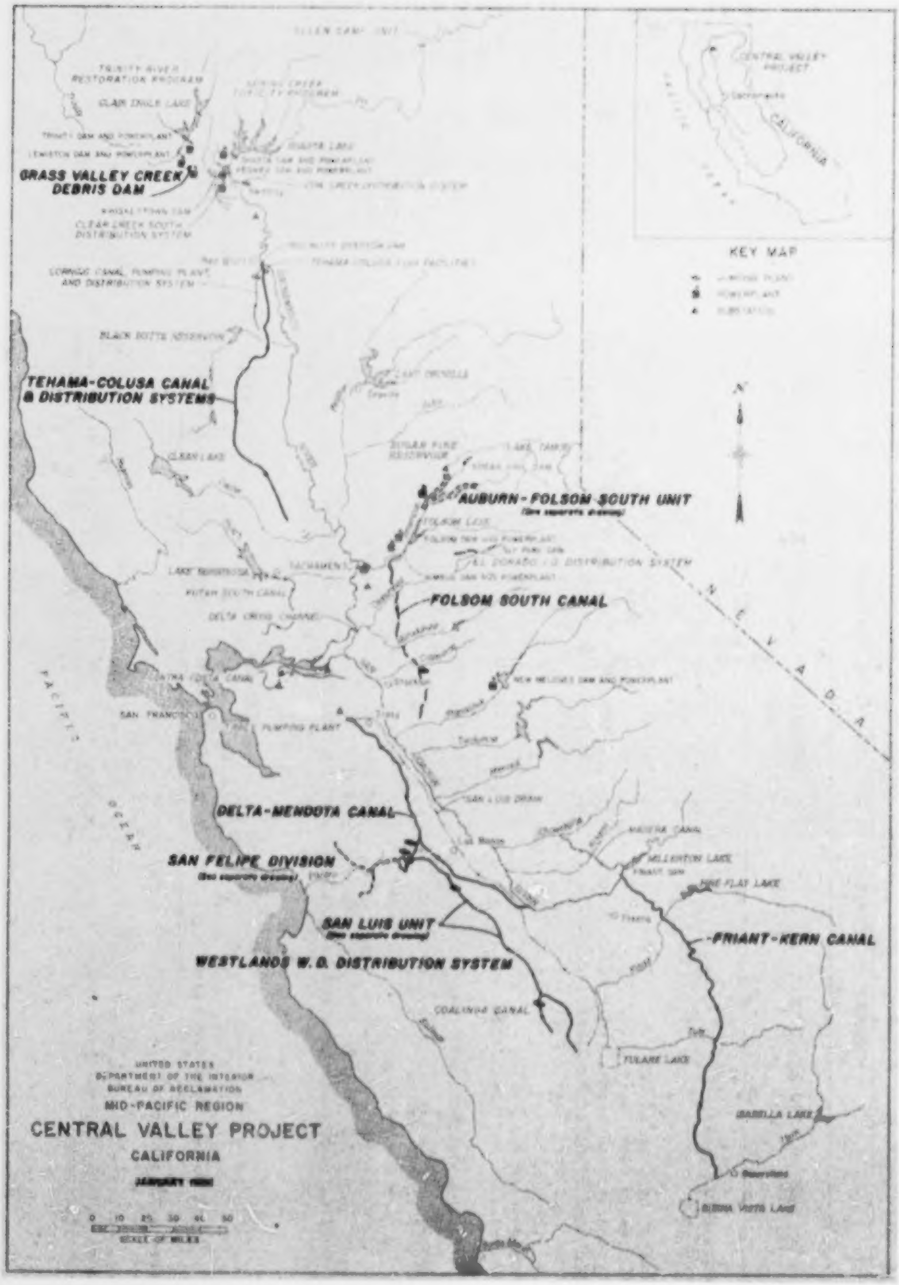
4/ Explanation of changes in allocation from FY 1986 Budget Justification:

Allocations	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 45,927,000	$ 45,938,000
Mexican Treaty	445,799,000	418,061,000
Other	164,000	164,000
Total	$ 491,890,000	$ 464,163,000

Explanation	Amount of Change
Cost indexing	+ $ 5,055,184
Reanalysis of future noncontract costs	+ $ 6,096,596
Reanalysis of future minor contract/contingency costs	- $ 7,619,600
Net contract costs due to savings on awarded contracts along with new, updated cost estimates on future work	- $ 31,259,180
Total	- $ 27,727,000

5/ Nonreimbursable preauthorization investigation costs (Public Law 92-149).

6/ A repayment contract with Coachella Valley County Water District was executed March 14, 1978, and validated June 30, 1978. Repayment of construction costs will be nonreimbursable during the period from completion of a new Coachella Canal to the end of the first year that mainstream Colorado River water is delivered to California in an amount less than the sum of quantities requested by California under Section 5 of the Boulder Canyon Project Act. This will probably occur in 1986 or 1987.


TRINITY RIVER RESTORATION PROGRAM
CLAIR ENGLE LAKE
TRINITY DAM AND POWERPLANT
LEWISTON DAM AND POWERPLANT
GRASS VALLEY CREEK DEBRIS DAM
SHASTA LAKE
SHASTA DAM AND POWERPLANT
KESWICK DAM AND POWERPLANT
WHISKEYTOWN DAM
CLEAR CREEK SOUTH DISTRIBUTION SYSTEM
CORNING CANAL, PUMPING PLANT, AND DISTRIBUTION SYSTEM
TEHAMA-COLUSA FISH FACILITIES
BLACK BUTTE RESERVOIR
TEHAMA-COLUSA CANAL & DISTRIBUTION SYSTEMS
LAKE OROVILLE
CLEAR LAKE
SUGAR PINE RESERVOIR
LAKE TAHOE
AUBURN-FOLSOM SOUTH UNIT
(See separate drawing)
FOLSOM LAKE
FOLSOM DAM AND POWERPLANT
EL DORADO I.D. DISTRIBUTION SYSTEM
NIMBUS DAM AND POWERPLANT
SACRAMENTO
LAKE BERRYESSA
PUTAH SOUTH CANAL
DELTA CROSS CHANNEL
FOLSOM SOUTH CANAL
CONTRA COSTA CANAL
SAN FRANCISCO
PUMPING PLANT
NEW MELONES DAM AND POWERPLANT
NEVADA
PACIFIC OCEAN
SAN LUIS DRAIN
DELTA-MENDOTA CANAL
SAN FELIPE DIVISION
(See separate drawing)
MADERA CANAL
MILLERTON LAKE
FRIANT DAM
PINE FLAT LAKE
Fresno
SAN LUIS UNIT
(See separate drawing)
FRIANT-KERN CANAL
WESTLANDS W.D. DISTRIBUTION SYSTEM
COALINGA CANAL
TULARE LAKE
ISABELLA LAKE
Bakersfield
BUENA VISTA LAKE
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
CALIFORNIA
0 10 20 30 40 50
SCALE OF MILES
CENTRAL VALLEY PROJECT
Sacramento
CALIFORNIA
KEY MAP
N

Footnotes: - (continued)

7/ Includes $ 418,061,000 Mexican Treaty Measures and $164,000 for nonreimbursable preauthorization investigation costs. (Public Law 92-149).

8/ Cost of the Desalting Complex is nonreimbursable except for cost associated with other beneficiaries. The Secretary's determination is to be made after data have been finalized. Costs for the Coachella Canal replacement will be shared by the United States and the Coachella Valley County Water District. Distribution will be on the basis of the benefit of water savings accruing to the United States and will be finalized when studies are completed. Costs associated with the Protective and Regulatory Pumping, including delivery of water to Mexico, will be nonreimbursable, except for water used in the United States.

9/ Appropriations authorized are $472,820,000 (October 1986). This authorization is adequate to cover this project as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding of this project in FY 1986 will be reduced by $860,000, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE I DIVISION
ARIZONA-CALIFORNIA

PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM:

Desalting Complex Unit	
Yuma Desalting Plant:	Capacity:
Type - Membrane (reverse osmosis)	96 Million Gallons per Day
Switchyard:	Capacity:
Yuma Desalting Plant site	62.5 Kilovolt Amperes
Transmission Lines:	Capacity:
Length - 3.8 Miles	161 Kilovolts
Bypass Drain:	Capacity:
Length - 16 Miles in United States 37 Miles in Mexico Bottom Width - 12 Feet Water Depth - 6.06 Feet	353 Cubic Feet per Second
Main Outlet Drain Extension Siphon:	Capacity:
Length - 3,075 Feet Diameter - 10 Feet	353 Cubic Feet per Second
Coachella Canal Unit	
Canal Replacement:	Capacity:
Length - 49 Miles Bottom Width - 16 Feet Water Depth - 10.42 Feet to Station 861+20 12.34 Feet to the end	1,500 Cubic Feet per Second

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE I DIVISION
ARIZONA-CALIFORNIA

PHYSICAL DATA ON STRUCTURES - 6

Protective and Regulatory Pumping Unit

Wells:	Capacity:
35 Units Depth - 600 feet	130,000 Acre-feet per Year Total - All Units
Conveyance System:	Capacity:
Open Channel Length - 5.9 Miles Bottom Width - 4 to 6 Feet Water depth - 2.8 to 5.8 Feet	7.5 to 300 Cubic Feet per Second
Closed Pipeline Length - 12.8 Miles Diameter - 27 to 72 inches	
Transmission Lines:	Capacity:
Length - 18.7 Miles 20.0 Miles	34.5 Kilovolts 69 Kilovolts

Land and Rights

Quantity - 43,511 Acres
Total Estimated Cost - $ 28,220,263
Cost per acre - $649
Acquisition - 66 percent complete as of September 30, 1985

Appropriation Title: Construction Program

COLORADO RIVER BASIN SALINITY CONTROL PROJECT - TITLE I DIVISION
ARIZONA-CALIFORNIA - 7

FISCAL YEAR 1987

Work Proposed	Program
Desalting Complex Unit. - Work will continue on construction of the Yuma Desalting Plant and related features and furnishing plant equipment. Work will also continue in the irrigation efficiency improvement program.	$25,392,000
Fish and Wildlife Facilities. - Work will continue on the Finney-Ramer Habitat Restoration contract in California and the Mumme Farm and Mittry Lake development contracts in Arizona.	1,035,000
TOTAL	$26,427,000

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE I - ARIZONA-CALIFORNIA

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Desalting Complex Unit	$347,753,123	$157,442,712	$34,331,300	$25,192,000	$130,787,111
Coachella Canal Unit	47,871,405	47,871,405	0	0	0
Protective and Regulatory Pumping Unit	31,678,000	19,478,197	0	0	12,199,803
Fish and Wildlife Facilities	15,146,000	6,011,481	3,637,000	1,035,000	4,462,519
Yuma Desalting Test Facility	19,392,472	19,380,902	11,570	0	0
Service Facilities, Depreciation, & Salvage.	0	1,360,853	300,000	200,000	(1,860,853)
Engineering and Design	(34,743,246)	(26,515,246)	(244,000)	(1,928,000)	(6,056,000)
Supervision and Administration	(77,834,473)	(41,438,057)	(4,018,856)	5,140,000	(6,056,000)
Total Construction Costs	$461,841,000	$251,545,550	$38,279,870	$26,427,000	$145,588,580
Other Project Costs	2,322,000	2,321,734	0	0	266
Total Project Costs	$464,163,000	$253,867,284	$38,279,870	$26,427,000	$145,588,846
Consolidated Expenditures and Credits	600,000	822,569	0	0	(222,569)
Total Expenditures	$464,763,000	$254,689,853	$38,279,870	$26,427,000	$145,366,277
Undelivered Orders	0	10,879,870	(10,879,870)	0	0
Total Obligations (Reclamation)	$464,763,000	$265,569,723	$27,400,000	$26,427,000	$145,366,277
Method of Financing:					
Appropriation available and required	$0	$0	$20,000,000	$26,427,000	$145,366,277
Application of prior year funds	0	0	5,400,000	0	0
Underfinancing	0	0	2,000,000	0	0

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE:
CENTRAL VALLEY PROJECT, CALIFORNIA

Completion Date:	% Complete	Date
1/	1/ 77	1/31/86

AUTHORIZATION: Finding of Feasibility, December 2, 1935
Public Law 75-392, August 26, 1937, and subsequent acts

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
2/	2/	10/1/86

LAND CERTIFICATION: 3/
DEFINITE PLAN REPORT: Will be completed as required

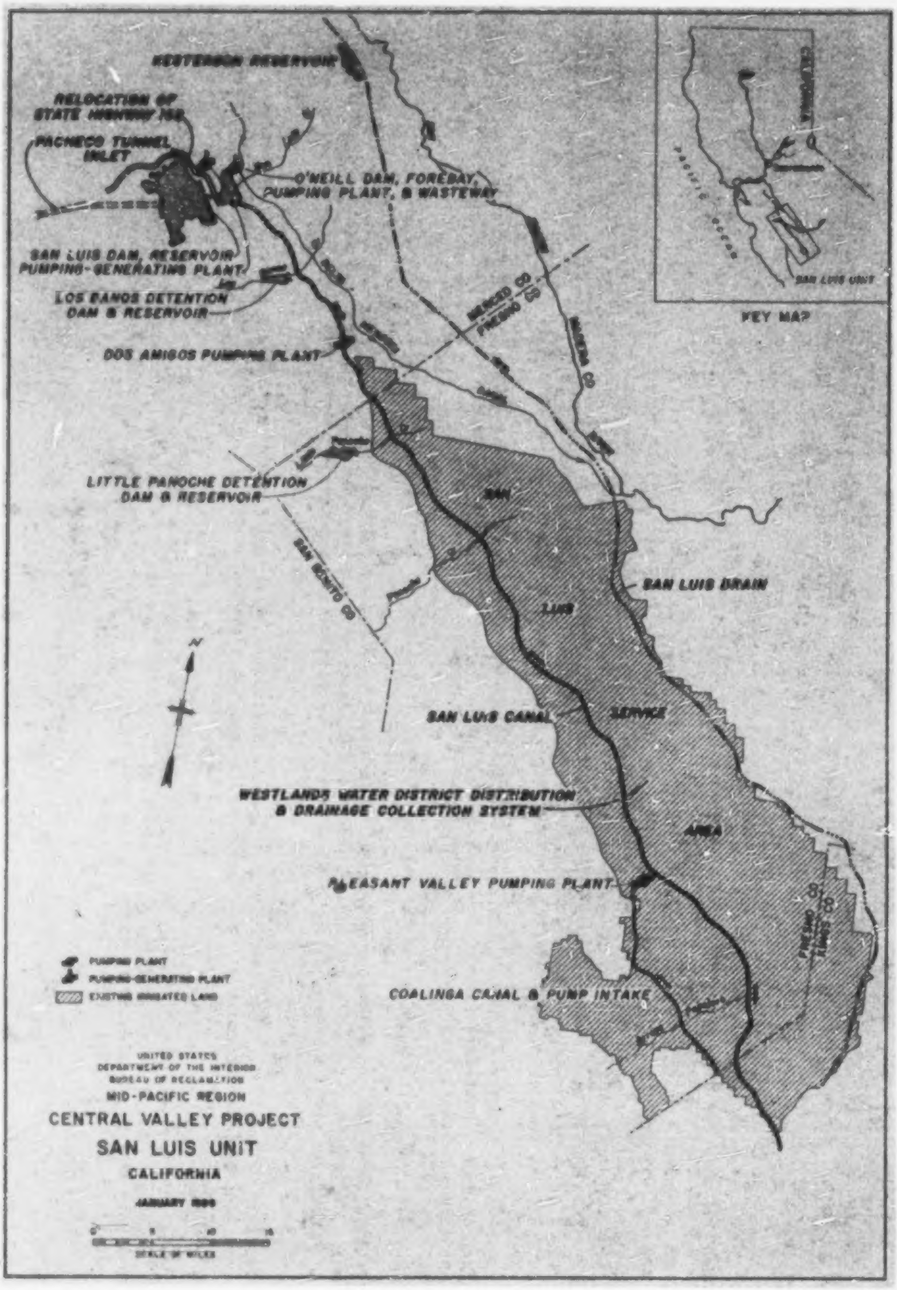
SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 20/	$4,966,524,980	Allotments to September 30, 1985	$2,215,340,417
Total Federal Obligations(Other) 4/	601,588,903	Allotments for FY 1986 a/	52,412,000
Net Property and Other Transfers:			
Federal Participation	2,656,571		
Non-Federal Participation Cash 5/	175,777,020	Allotments to Date	$2,267,752,417
Non-Federal Participation-Noncash	31,581,719	Allotments Required for FY 1987	29,896,000
Adjustment 6/	194,576,807	Balance to Complete after FY 1987	$2,668,876,563
Total to be Allocated	$5,972,706,000		

ALLOCATIONS 7/		REPAYMENT		AMOUNTS PER ACRE		
Irrigation	$3,457,908,000	Amount Repaid by:		Irrig. Invest/Acre	$1,361	Payment Capacity per Acre-Foot: $8 to $40
Power	800,698,000	Irrigators 11/	$3,060,050,000	Repayment of Investment per Acre:		Annual Charges:
M&I Water	733,082,000	Power 12/	1,222,970,000			O&M
Recreation 8/	202,896,000	M&I Water 13/	737,391,000	By Irrigators	1,198	Construction
F&WL 9/	245,957,000	State-County	211,399,000	By Power Revenues	163	$1.50 to $16.50 per acre foot
Flood Control	153,409,000	Local Interests 14/	11,249,000			
Navigation	4,972,000	Deferred Use	66,931,000			
State-County	202,781,000					
Other 10/	171,003,000	Nonreimbursable 15/	662,716,000			
Total	$5,972,706,000	Total	$5,972,706,000			

STATUS OF REPAYMENT CONTRACT: As of September 30, 1985, 253 9(c) and 9(e) contracts for water service have been executed and 17 were under negotiation. Contracts for the construction of 27 9(d) distribution systems have been executed and one is under negotiation. Power wheeling contracts were executed June 22, 1965, and July 31, 1967, for San Luis Unit and the Central Valley Project, respectively. To date, 55 power sales contracts are in force.

STATUS OF NEPA COMPLIANCE: Auburn-Folsom South Unit - Folsom South Canal supplemental scheduled to be filed with Environmental Protection Agency; draft September 1987, final September 1988. San Luis Unit - closure and cleanup of the San Luis Drain/Kesterson Reservoir, draft scheduled for April 1986, final scheduled for September 1986. -- Rewrite of draft scheduled for December 1989, final supplemental scheduled for September 1990. Trinity River Restoration Program - scheduled to be filed with Environmental Protection Agency, draft March 1986, final July 1986. 16/


KESTERSON RESERVOIR
RELOCATION OF STATE HIGHWAY 152
PACHECO TUNNEL INLET
O'NEILL DAM, FOREBAY, PUMPING PLANT, & WASTEWAY
SAN LUIS DAM, RESERVOIR PUMPING-GENERATING PLANT
LOS BANOS DETENTION DAM & RESERVOIR
DOS AMIGOS PUMPING PLANT
MERCED CO
FRESNO CO
MADERA CO
LITTLE PANOCHE DETENTION DAM & RESERVOIR
SAN BENITO CO
SAN
LUIS
SERVICE
AREA
SAN LUIS DRAIN
SAN LUIS CANAL
WESTLANDS WATER DISTRICT DISTRIBUTION & DRAINAGE COLLECTION SYSTEM
PLEASANT VALLEY PUMPING PLANT
COALINGA CANAL & PUMP INTAKE
FRESNO CO
KINGS CO
N
PACIFIC OCEAN
CALIFORNIA
SAN LUIS UNIT
KEY MAP
PUMPING PLANT
PUMPING-GENERATING PLANT
EXISTING IRRIGATED LAND
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
SAN LUIS UNIT
CALIFORNIA
JANUARY
0
5
10
15
SCALE OF MILES

PROJECT DATA SHEET - 2
CENTRAL VALLEY PROJECT
California

DESCRIPTION: The project is located in central California and has project facilities in 29 counties 17/ of the State. Basically , the project consists of an integrated system for water storage and conveyance. Water made available by the project will provide full irrigation to 112,305 acres, supplemental water to 2,448,993 acres,18/ 1,054,254 acre-feet of water annually for municipal and industrial use,18/ and generation of 2,050,770 kilowatts 19/ of hydroelectric power. Flood control, recreation, navigation, and fish and wildlife protection are also products of the project. More than 200 different commercial crops are grown on the project, including cereal, field, forage, nursery, seed and truck crops, nuts, vines, and deciduous and citrus fruits. Additional information is provided by Project Data sheets for Auburn-Folsom South, San Luis, and San Felipe.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1936. See Project Data Sheets for the San Luis Unit, Auburn-Folsom South Unit, and San Felipe Division for other information pertaining specifically to these units of the Central Valley Project. In late May 1981, a concluding report on the Allen Camp Unit was released placing the unit in inactive status because the benefit-cost ratio computed for the project indicates the unit is not economically justified for development at this time.

Footnotes:

1/ Sacramento River Division - FY 1994; San Luis Unit - will require about 6 years after distribution and drainage system is reauthorized to provide additional appropriation ceiling; Auburn-Folsom South Unit - Dependent upon possible reauthorization to increase the appropriation ceiling; Trinity River Restoration Program - FY 1995; San Felipe Division - Hollister and Santa Clara subareas - FY 1987, Watsonville area facilities FY 1990. See individual Project Data Sheets, which follow, for details.

2/ See Project Data Sheets which follow for the San Luis Unit, Auburn-folsom South Unit, and San Felipe Division of the Central Valley Project for benefit-cost ratios on these parts of the project.

3/ Land Certification: Auburn-Folsom South Unit, July 20, 1967; Trinity River Division, July 24, 1964; San Luis Unit, May 11, 1962, below elevation 470, February 14, 1979, above elevation 470; Sacramento River Division, May 3, 1956, additional certification of extended service area accomplished December 22, 1980; and San Felipe Division, January 19, 1979.

4/ Costs of construction administered by the Corps of Engineers for facilities associated with the Central Valley Project include $62,642,815 for Folsom Reservoir, 369,720,000 for New Melones Reservoir, $5,382,000 for reimbursable costs of Hidden Reservoir, $9,153,000 for reimbursable costs of Buchanan Reservoir, $14,565,000 for Black Butte Reservoir, and $96,000 for dredging on the Sacramento River. Also includes $140,030,088 for Department of Energy transmission facilities.

Footnotes: (continued)

5/ Includes $164,022,533 from State of California for San Luis Joint-Use Facilities, $8,109,487 from Westlands Water District for distribution system construction, $50,000 from San Felipe Committee for studies and investigations, $3,585,000 from city of Redding for construction of Keswick Switchyard additions to provide direct power service to the city, and $5,000 from Big Valley Irrigation District, $2,500 from Modoc County, $2,500 from Lassen County for investigations on the Allen Camp Unit.

6/ Includes interest during construction of $192,950,000 and $20,775,561 for the California lines of the Pacific Northwest-Southwest Intertie partially offset by a decrease of $19,148,509 for power wheeling costs on San Luis Unit and New Melones Project which are to be amortized annually as operation and maintenance costs over the 50-year contract period and are now the responsibility of the Department of Energy. Adjustment of $245 has been subtracted for rounding.

7/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$3,345,044,000	$3,477,087,000
Power	795,881,000	808,426,000
Municipal and Industrial Water	715,850,000	737,845,000
Recreation	202,513,000	202,896,000
Fish and Wildlife	193,528,000	204,786,000
Flood Control	154,729,000	153,409,000
Navigation	5,083,000	4,972,000
San Luis-State	193,659,000	212,282,000
Other	204,290,000	171,003,000
Total	$5,810,577,000	$5,972,706,000

Explanation	Amount of change
Cost indexing (October 1985 to October 1986)	$+42,093,000
Design changes: Sacramento River Division - Colusa County Water District, Contract No. 3, Gravity turnout for Glide Water District; drum screens at Red Bluff Diversion Dam; San Felipe Division - supervisory control system	+6,463,000

PROJECT DATA SHEET - 4
CENTRAL VALLEY PROJECT
California

Footnotes: (Continued)

Explanation	Amount of change
Changes based on bids: Sacramento River Division - diffuser cleaning system at Red Bluff Diversion Dam, operating equipment for Red Bluff and Willows; San Felipe Division - Coyote Pumping Plant, Hollister Outlet Works, supervisory control system	-6,008,000
Changes in quantities or estimates: Sacramento River Division - right bank fishway modification at Red Bluff Diversion Dam, land acquisition and crop damage payments; San Luis Unit - compaction grouting, canal and turnout structures; Auburn-Folsom South Unit - diversion tunnel repair, contract modifications and transfer stipulations for Sugar Pine facilities; Trinity River Restoration Program - change in plan of development; San Felipe Division - Pacheco Pumping Plant, Pacheco Tunnel, Hollister Conduit - Section 2, Pacheco Conduit - Sections 1 and 2, Hollister Outlet Works, Santa Clara Tunnel	+549,000
Interest during construction	+7,543,000
New or deleted features: New - Sacramento River Division - loading dock and warehouse modifications; Auburn-Folsom South Unit - modify downstream cofferdam; Trinity River Restoration Program - Grass Valley Creek Debris Dam and Trinity Fish Hatchery Modification; San Felipe Division - Watsonville facilities; Delete - Sacramento River Division - transfer stipulations, Tehama-Colusa Canal Reaches 7 and 8A, regrade gravel in dual-purpose channel (interim action measures to alleviate fishery problems at Red Bluff Diversion Dam and Tehama-Colusa Fish Facilities), operating equipment for Dunnigan Water District; Trinity River Restoration Program - State and County participation	+73,046,000

Footnotes: (continued)

Other: Reestimate of minor contract and noncontract costs, Department of Energy construction costs, San Joaquin Valley Drainage Program, repair slide at San Luis Dam accomplished under Emergency Fund, changes in State of California participation, construction costs of Corps of Engineers facilities, Delta Support Studies, miscellaneous adjustments	+38,443,000
Total	$ +162,129,000

The irrigation and municipal and industrial water allocations increased due to increased costs of the Auburn-Folsom South Unit, the San Luis Unit and the addition of the Watsonville Facilities to the San Felipe Division.

The power allocation increased due to indexing of costs of the Auburn transmission facilities that would be constructed by the Department of Energy and a revision in the method of calculating interest during construction for the transmission facilities. The recreation and allocation increased due to indexing of the Auburn-Folsom South Unit facilities. The Fish and Wildlife and State-County allocations increased because of the addition of the Grass Valley Creek Debris Dam and the Trinity Fish Hatchery modification to the Trinity River Restoration Program. The flood control and navigation allocations decreased due to a decrease in estimated costs for Corps of Engineers facilities. The allocation to Other decreased due to decreases in the deferred use of the Sacramento River Division facilities and in the estimated costs for Corps of Engineers facilities.

8/Includes reimbursable non-Federal recreation, $9,194,000, and nonreimbursable recreation, $191,648,000.

9/Includes the following nonreimbursable costs: fish and wildlife enhancement, $103,972,000; wildlife refuge, $27,767,000; fish and wildlife mitigation, $33,739,000; anadromous fishery, $8,380,000; and waterfowl conservation, $30,928,000 in accordance with Public Law 95-616, November 18, 1978, whereby water provided by the Central Valley Project for waterfowl conservation shall not be reimbursable or returnable under Federal Reclamation Laws. Reimbursable costs of the Trinity River Restoration Program includes: State of California and Trinity and Humboldt Counties, $9,501,000; Central Valley Project water and power users, $31,670,000.

PROJECT DATA SHEET - 6
CENTRAL VALLEY PROJECT
California

Footnotes: (continued)

10/Includes deferred use, $66,931,000; water quality, $5,307,000; highway improvements, $76,191,000; cultural resources activities (Public Law 93-291), $21,461,000; and nonreimbursable investigations for Allen Camp Unit, $1,113,000.

11/ Of this amount an estimated $1,470,423,000 are covered by existing water service and repayment contracts. The remaining $1,591,399,000 are expected to be repaid by future contracts and increases in the water rates of existing water service contracts. The change in the estimated amount to be recovered from irrigators is the result of the extension of the computational period for the repayment studies. Recovery of costs identified as being reimbursable is currently based on a rolling 50-year repayment basis. This means that costs integrated for repayment purposes for the total Central Valley Project must be recovered within 50 years of the date that the last authorized unit is put into service. Since the proposed in-service date of the last unit, Auburn-Folsom South Unit, has been delayed, this has extended the computational period for the Central Valley Project composite repayment studies.

12/ Current commercial power rates are not sufficient to repay the cost allocated to this function. A power rate increase will be necessary to repay the investment of the total authorized project. The change from the FY 1986 Budget Justifications is a result of the extended repayment period which allows the irrigators to repay a greater part of the project costs and a decrease in the costs of facilities associated with the power function. On November 11, 1983, the Federal Energy Regulatory Commission approved a power rate increase which will be effective for the next 5-year period. The rates contained in this order will be sufficient to recover all costs allocated to the commercial function and those costs which are above and beyond the capability of the irrigators to repay during the repayment period.

13/Of this amount, $4,264,000 of the distribution system costs are scheduled to be repaid by existing repayment contracts. The remaining $733,581,000 will be repaid by future water service contracts and increases in the water rates of existing water service contracts.

14/Reimbursable allocations to recreation of $11,103,000 on Auburn-Folsom South Unit will be repaid by local interest under Section 3 of Public Law 89-161. The reimbursable recreation costs of $146,000 on the San Felipe Division will be paid by local interest under provisions of Public Law 89-72.

15/Includes flood control, $153,409,000; navigation, $4,972,000; fish and wildlife enhancement, $103,972,000; wildlife refuge, $27,767,000; fish and wildlife mitigation, $33,739,000; anadromous fishery, $8,380,000; recreation, $191,648,000; water and quality, $5,307,000; highway improvements, $76,191,000; cultural resources activities, $21,461,000; waterfowl conservation, $30,928,000; and nonreimbursable investigations for Allen Camp Unit, $1,113,000.

PROJECT DATA SHEET - 7
CENTRAL VALLEY PROJECT
California

Footnotes: (continued)

16/Final filed with Council on Environmental Quality as follows: Sacramento River Division, Tehama-Colusa Canal - June 7, 1972, Supplemental filed May 16, 1975; San Luis Unit - October 4, 1972; Auburn-Folsom South Unit, Auburn Dam and Reservoir and Folsom South Canal - November 13, 1972, Supplemental filed August 6, 1973, amendment to final filed September 20, 1974, Supplemental No. 2 final filed September 23, 1980; Foresthill Divide area - final filed May 25, 1976; San Felipe Division - Divisionwide March 8, 1976. San Luis Unit Supplement draft filed July 30, 1979. Allen Camp Unit statement will not be filed as the unit is not economically justified for development. A Categorical Exclusion Checklist for the Trinity Fish Hatchery Modification was completed October 6, 1983.

17/Twenty-nine counties - Alameda, Butte, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kern, Kings, Lassen, Madera, Merced, Modoc, Monterey, Placer, Sacramento, San Benito, Santa Clara, Santa Cruz, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Trinity, Tulare, Yolo, and Yuba.

18/ Increase due to the addition of the Watsonville Facilities to the San Felipe Divison.

19/This includes 300,000 kilowatts developed by the Corps of Engineer's New Melones Powerplant and includes 153,410 kilowatts of generator capacity available from Shasta Division and American River Division power facilities due to uprating of capacities which has been accomplished under the operation and maintenance program.

20/Separate Project Data Sheets which follow for the individual units and divisions provide comparisons between current estimates of appropriations and the appropriation ceilings for San Luis Unit, Auburn-Folsom South Unit, and San Felipe Division.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $ 2,253,716, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE: CENTRAL VALLEY PROJECT, SAN LUIS UNIT, CALIFORNIA	Completion Date: 1/	% Complete 1/ 74	Date 1/31/86

AUTHORIZATION: Public Law 86-488, June 3, 1960; Public Law 95-46, June 15, 1977

LAND CERTIFICATION: May 11, 1962 and February 14, 1979 3/

DEFINITE PLAN REPORT: Submitted December 29, 1962

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
2.7 2/	4.5 2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 15/	$1,261,980,000
Net Property and Other Transfers:	
Federal Participation	7,625,121
Non-Federal Participation Cash 4/	172,132,020
Non-Federal Participation Non-Cash (State)	31,581,719
Adjustment 5/	-11,034,840
Total to be Allocated	$1,461,975,000

Allotments to September 30, 1985	$ 484,576,443
Allotments for FY 1986 a/	12,490,000
Allotments to Date	$ 497,066,443
Allotments Required for FY 1987	12,172,000
Balance to Complete after FY 1987	$ 752,432,537

ALLOCATIONS 6/		REPAYMENT		AMOUNTS PER ACRE		
Irrigation	$1,235,648,000	Amount Repaid by:		Irrig. Invest/Acre	$2,119	Payment Capacity per Acre-Foot: $15 to $36
Power		Irrigators 8/	$1,088,063,000	Repayment of Investment per Acre:		Annual Charges:
M&I Water	13,851,000	Power 9/	147,585,000	By Irrigators	$1,866	O&M
Recreation	3,497,000	M&I Water 9/	13,851,000	By Power Revenues	253	Construction $8.00 per acre-foot
F&WL		San Luis - State 10/	202,781,000			
Flood Control	2,558,000					
San Luis - State	202,781,000					
Other 7/	3,640,000					
		Nonreimbursable 11/	9,695,000			
Total	$1,461,975,000		$1,461,975,000			

STATUS OF REPAYMENT CONTRACT: Repayment contracts with Westlands Water District for water service and construction executed June 5, 1963, and April 1, 1965, respectively, both subject to amendment for service to a larger area. The execution of the amendatory contract is scheduled for April 1989 and may be subject to resolution between the Department of the Interior and the State of California on water quality issues in the Sacramento-San Joaquin Delta. 12/

STATUS OF NEPA COMPLIANCE: Environmental statement for cleanup and closure of the San Luis Drain and Kesterson Reservoir is scheduled to be filed with the Environmental Protection Agency: draft, April 1986, final, September 1986. Rewrite of the supplemental statement is scheduled to be filed with the Environmental Protection Agency: draft, December 1989, final, December 1990. 13/

DESCRIPTION: This unit encompasses an area from near Los Banos on the west side of the San Joaquin Valley to about 30 miles southwest of Fresno. The unit will provide supplemental water to 583,000 14/ acres and 26,500 acre-feet annually for municipal and industrial use. The unit will also provide recreation and flood control benefits.

PROJECT DATA SHEET - 2
CENTRAL VALLEY PROJECT
San Luis Unit, California

OTHER INFORMATION: Funds to initiate preconstruction planning and construction were appropriated in FY 1961. An amendatory repayment contract with the Westlands Water District has been negotiated to cover increased distribution and drainage collector system costs and a proportionate share of the costs of San Luis Drain. Execution of the amendatory contract is scheduled for April 1989. Previously, the District had requested that these negotiations be reopened to increase the size of the area to be provided drainage and to ensure completion of the San Luis Drain to a point of discharge. However, negotiations have temporarily been suspended because of a lawsuit initiated by the District and to allow the United States to complete NEPA compliance and obtain reauthorization of the San Luis Unit. Because of the need for additional appropriation cost ceiling, Public Law 95-46 authorized $31,050,000 to be appropriated for FY 1978 for continuation of construction of the Westlands Water District and San Luis Water District Distribution System and the San Luis Drain. The law also directed the Secretary of the Interior to establish a task force to review the management, organization, and operation of the San Luis Unit and to report the results to Congress no later than January 1, 1978. In early January the task force report was submitted to the House and Senate Appropriation Subcommittees of Public Works for Water and Power Development and Energy Research, the Senate Committee on Energy and Natural Resources, and the House Committee on Interior and Insular Affairs. On July 19, 1982, the Comptroller General issued decision B-198221 on the matter of obligation availability of funds authorized for the San Luis Unit, Central Valley Project distribution systems and drains which stated that Public Law 95-46 funds were appropriated for obligation only in fiscal year 1978. Section 140 of Public Law 97-377, approved December 21, 1982, provides that Public Law 95-46 funds are henceforth available until expended. Therefore, work will continue on the San Luis Drain and Westlands Water District distribution and drainage collector systems. A lawsuit was filed on November 26, 1975, by the Contra Costa County Water District requesting that the United States be enjoined from executing the proposed amendatory contract with Westlands Water District until the provisions of Public Law 91-190 (National Environmental Policy Act) had been complied with. A stipulation entered into by the United States in the lawsuit requires completion of a supplemental Environmental Impact Statement, the draft of which is scheduled to be filed with the Environmental Protection Agency in December 1989.

In a June 1, 1978 Solicitor's Opinion, it was concluded that the authorized service area of the San Luis Unit is approximately 500,000 acres and will require reauthorization to increase the area to be served. In addition, this Opinion determined that the Government's legal obligation to deliver water to Westlands Water District is limited to those specified under the 1963 repayment contract. The Reclamation Safety of Dams Act of 1978, as amended (Public Law 95-578), approved November 2, 1978, provided assurance that Congress had provided the necessary oversight requirements under Section 3 of Public Law 95-46 so as to authorize execution of three temporary water-service contracts between the United States and the Westlands Water District. The integration of gravity and ground-water pumping system for the Westland District was determined to be unauthorized and subsequently deleted from the program except for expenditures to date of $77,167.

The discovery of high concentrations of selenium and other trace elements in the San Luis Drain and Kesterson Reservoir has necessitated expanding studies being conducted to develop and evaluate economically viable and environmentally sound alternatives for the containment and/or treatment and disposal of subsurface drainage water. These studies will define both interim and permanent solutions to the problem. On February 5, 1985, the State Water Resources Control Board directed the Bureau to submit a plan detailing actions it will take by February 5, 1988 to clean up Kesterson Reservoir and to protect the wildlife of the area and waters of the State. On March 15, 1985, the Secretary of the Interior directed the Bureau to shutdown the Kesterson Reservoir and to clean up the water and soil in the reservoir. The Secretary further directed the Bureau to terminate water deliveries to those users that contribute drainage waters to the San Luis Drain. On March 28, 1985, an agreement between the Department of the Interior and Westlands Water District was reached which allows for delivery of water for the 1985 growing season. Agricultural drainage water flows into Kesterson Reservoir will be terminated by June 30, 1986. Congress will be kept informed of the progress of these studies.

Footnotes:

1/ Facilities to serve 509,232 acres are complete and in operation as of September 30, 1985. Remaining construction will require about 6 years after distribution and drainage system is reauthorized to provide additional appropriation ceiling, authority for increasing the service area, and other required authorizations.

2/ Direct and total irrigation benefits increased due to a higher estimated benefit per acre-foot. Municipal and industrial benefits increased due to revised estimates in the cost of the single purpose alternative. Benefits for recreation and area redevelopment increased due to indexing. This resulted in an increase in the direct benefit-cost ratio from 2.6 to 2.7 and in the total benefit-cost ratio from 4.4 to 4.5. The ratios were computed by using the authorized interest rate of 2-7/8 percent.

3/ Certification of land classification below elevation 470 made by Secretary on May 11, 1962, and above elevation 470 on February 14, 1979.

4/ Includes $164,022,533 from the State of California for San Luis joint facilities and $8,109,487 from Westlands Water District for distribution system construction.

5/ Adjustment subtracts $8,382,000 representing the cost of the inlet to the Pacheco Tunnel which was built concurrently with the San Luis Reservoir and included in the San Luis Unit fund allotment. The tunnel is a feature of the San Felipe Division and the costs have been transferred to that division. Also deducted is $2,653,002 for purchase of Pacific Gas and Electric Company wheeling for the San Luis Unit which has now been transferred to the Department of Energy. An amount of $162 is added for rounding. Per instructions in a letter from the Acting Assistant Commissioner dated June 17, 1955, Subject: Interest Charges - Central Valley Project, California, no interest during construction on municipal and industrial water facilities is to be computed for the San Luis Unit.

PROJECT DATA SHEET - 4
CENTRAL VALLEY PROJECT
San Luis Unit, California

Footnotes - Continued

6/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocations	FY 1986 estimate	FY 1987 estimate
Irrigation	$1,201,699,000	$1,235,648,000
Municipal and Industrial Water	13,418,000	13,851,000
Recreation	3,497,000	3,497,000
Flood Control	2,558,000	2,558,000
San Luis - State	187,836,000	202,781,000
Other	3,656,000	3,640,000
Total.	$1,412,664,000	$1,461,975,000

Explanation	Amount of change
Cost indexing (October 1985 to October 1986).	$+ 9,067,000
Change in quantities or estimates: contract modifications on compaction grouting, raising canal and turnout structures	-303,000
Others: San Joaquin Valley Drainage Program (San Luis Drain and Kesterson Reservoir), repairs to slide on San Luis Dam under Emergency Fund, Joint facilities costs, rounding	+40,547,000
Total.	$+49,311,000

7/ Includes nonreimbursable costs of $1,383,000 for construction of highway improvements (Public Law 87-874, as amended by Public Law 93-251); wildlife refuge, $538,000; waterfowl conservation, $719,000; and $1,000,000 for cultural resources activities (Public Law 93-291).

8/ Of this amount an estimated $661,182,000 is covered by existing water-service and repayment contracts. The remaining $426,881,000 are anticipated to be repaid by future contracts and increases in existing water rates based on the most recent authorized project repayment studies.

Footnotes: (continued)

9/ Due to operational and financial integration, repayment by the power and municipal and industrial functions, including aid to irrigation, is appropriately determined only in the composite repayment analysis of the total authorized Central Valley Project. To illustrate repayment for this unit, part of the net revenues from power and municipal and industrial functions available for repayment of the total project is shown. See the Project Data Sheet of the Central Valley Project for the repayment analysis of these functions.

10/ The amount shown is the total estimated share of San Luis joint facility costs to be repaid by the State of California. Increase of $14,945,000 from fiscal year 1986 Budget Justifications includes $15,488,431 to cover slide repair work on San Luis Dam partially offset by a decrease in estimates of work remaining to be done on the San Luis joint facilities.

11/ Includes nonreimbursable flood control, $2,558,000; recreation, $3,497,000; construction of highways to higher standards (Public Law 87-874), $1,383,000; wildlife refuge, $538,000; waterfowl conservation, $719,000; and for cultural resources activities, $1,000,000.

12/ The existing 1965 repayment contract with the Westlands Water District covers expenditures up to $157,048,000. The District's Board of Directors has also adopted a resolution pledging to repay costs of work authorized under Public Law 95-46 covering $30,140,000 more. Negotiations have been completed for an amendatory contract that would increase the repayment contract to an amount sufficient to repay all costs of the distribution and drainage collector system and a proportionate share of the costs of San Luis Drain. However, the District has requested that these negotiations be reopened to increase the size of the area to be provided drainage and to ensure completion of the San Luis Drain to a point of discharge. The amendatory repayment contract cannot be signed until the supplemental EIS is filed and the Contra Costa County Water District lawsuit is settled. The discovery of high concentration of selenium and other trace elements in the San Luis Drain and Kesterson Reservoir has necessitated expanding studies being conducted to obtain a discharge permit from the State of California and to complete the supplemental EIS. These actions are now anticipated to occur in mid-1989.

13/ Projectwide final environmental statement was filed with Council on Environmental Quality October 4, 1972. Draft supplement to final for San Luis Unit filed with the Environmental Protection Agency July 30, 1979.

14/ A June 1, 1978 Solicitor's Opinion concluded that "In 1960, Congress authorized delivery of Federal reclamation water to a service area of approximately 500,000 acres, part of which lies within the current boundaries of the Westlands Water District. Post-authorization expansion of this service area by some 150,000 acres has not been approved or ratified by Congress and accordingly cannot be regarded as authorized." The figure of 583,000 acres was developed during the interrogatory stages of the Contra Costa County Water District lawsuit proceedings.

PROJECT DATA SHEET - 6
CENTRAL VALLEY PROJECT
San Luis Unit, California

Footnotes: (continued)

15/ The appropriations authorized for the Federal and the joint-use facilities (which total $282,707,188) of the San Luis Unit are $553,400,000 (October 1986). This authorization is adequate to cover the construction of these facilities as currently proposed.

Appropriations authorized for the San Luis Unit Distribution and Drainage System are $242,001,311.b/ The comparable Federal obligation is $978,960,792, which exceeds the ceiling by more than the amount of contingencies included in the obligation. Appropriate congressional committees have been advised of the ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $537,070, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justification.

b/ Because of an emergency situation concerning the Kesterson reservoir, the appropriation ceiling was increased by $7 million through the use of the Emergency Fund and Construction Program funds under the Secretary of Interior's authority in Section 201 of the general provisions of the FY 1985 appropriations act.

CENTRAL VALLEY PROJECT
SAN LUIS UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 7

STATE-FEDERAL FACILITIES

COMPLETED WORK:

San Luis Dam and Reservoir

Dam:
Type - Earthfill
Structural Height - 382 feet
Crest Length - 18,600 feet
Base Width - 2,420 feet

Spillway:
Type - Concrete morning-glory inlet, concrete conduit, concrete chute, concrete stilling basin, and outlet channel.
Design Discharge - 1,030 cubic feet per second

Reservoir Capacity:
Total Storage - 2,041,000 acre-feet

San Luis Pumping-Generating Plant

Eight vertical-shaft, dual-purpose pump-generator units
Pump rated capacity, each: 1,375 cubic feet per second at 290 feet of head
Generator ratings, each: 53,000 Kilovolt amperes at 150 revolutions per minute, 34,000 kilovolt amperes at 120 revolutions per minute

O'Neill Dam, Forebay and Wasteway

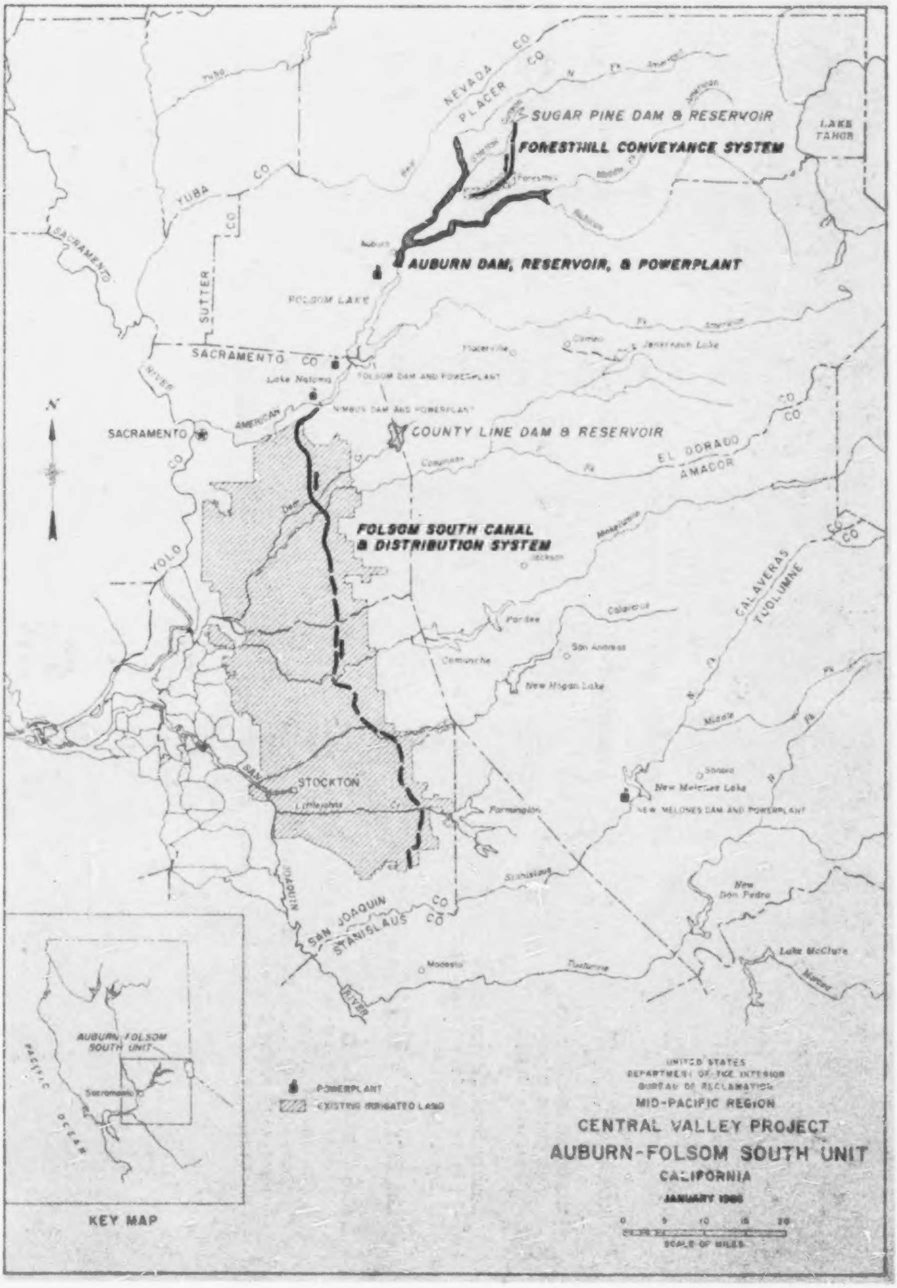
Dam:
Type - Earthfill
Structural Height - 87 feet
Crest Length - 14,350 feet
Base Width - 382 feet

Spillway:
Type - Concrete morning-glory inlet, concrete conduit, concrete chute, concrete stilling basin, and outlet channel.

Reservoir Capacity:
Total Storage: 56,000 acre-feet

Dos Amigos Pumping Plant

Number of Units: six vertical-shaft pumps
Rated Pump Capacity, each: 2,200 cubic feet per second at a head of 125 feet.
Range of Heads: 107 to 125 feet


NEVADA CO
PLACER CO
SUGAR PINE DAM & RESERVOIR
FORESTHILL CONVEYANCE SYSTEM
LAKE TAHOE
YUBA CO
SUTTER CO
SACRAMENTO
Auburn
Foresthill
AUBURN DAM, RESERVOIR, & POWERPLANT
FOLSOM LAKE
SACRAMENTO CO
Lake Natoma
FOLSOM DAM AND POWERPLANT
NIMBUS DAM AND POWERPLANT
Placerville
Jenkinson Lake
AMERICAN
RIVER
SACRAMENTO
N
COUNTY LINE DAM & RESERVOIR
Cosumnes
EL DORADO CO
AMADOR CO
YOLO CO
FOLSOM SOUTH CANAL & DISTRIBUTION SYSTEM
Mokelumne
Jackson
Calaveras
Pardee
San Andreas
Camanche
New Hogan Lake
CALAVERAS CO
TUOLUMNE CO
Middle Fk
Sonora
New Melones Lake
NEW MELONES DAM AND POWERPLANT
STOCKTON
Littlejohns Cr
Farmington
Stanislaus
SAN JOAQUIN CO
STANISLAUS CO
New Don Pedro
Lake McClure
Merced
Modesto
Tuolumne
RIVER
AUBURN-FOLSOM SOUTH UNIT
Sacramento
PACIFIC OCEAN
KEY MAP
POWERPLANT
EXISTING IRRIGATED LAND
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
AUBURN-FOLSOM SOUTH UNIT
CALIFORNIA
JANUARY 1966
0 5 10 15 20
SCALE OF MILES

CENTRAL VALLEY PROJECT
SAN LUIS UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 8

Channels, Leeves, and Floodworks

Los Banos Detention Dam and Reservoir

Dam:	Spillway:	Reservoir Capacity:
Type - Earthfill	Type - Uncontrolled ogee crest, chute, and stilling basin	Total Storage - 34,600 acre-feet
Structural Height - 167 feet	Design Discharge - 8,600 cubic feet per second	
Crest Length - 1,370 feet		
Base Width - 384 feet		

Little Panoche Detention Dam and Reservoir

Dam:	Spillway:	Reservoir Capacity:
Type - Earthfill	Type - Morning-glory-type inlet structure conduit through dam, and stilling basin.	Total Storage - 5,580 acre-feet
Structural height - 151 feet	Design Discharge - 18,300 cubic feet per second	
Crest Length - 1,440 feet		

CONSTRUCTION PROGRAM:

San Luis Canal

Length - 102.5 miles; capacity - 13,100 to 8,350 cubic feet per second; bottom width - 100 to 50 feet; water depth - 21.1 to 32.8 feet

FEDERAL FACILITIES

COMPLETED WORK:

Pleasant Valley Pumping Plant

Nine vertical-shaft pumps - total capacity 1,185 cubic feet per second at 195 feet of head

CENTRAL VALLEY PROJECT
SAN LUIS UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 9

O'Neill Pumping Plant (Serves both as pumping and generating plant)

Six vertical-shaft, dual-purpose pump-generator units
Generator rating, each - 4,200 kilovolt amperes at 200 revolutions per minute
Pump Rated Capacity, each - 700 cubic feet per second at 56 feet of head

Coalinga Canal and Pump Intake

Length - 13.4 Miles; Capacity - 725 to 1,140 cubic feet per second; Bottom Width - 12 feet; Water Depth - 9.3 to 11.8 feet

San Luis Drain

Drain:
Length - 188 Miles; Capacity - 100 to 450 cubic feet per second; Bottom Width - 10 feet; Water Depth - 6.3 to 9.7 feet.

Holding Reservoirs:

Kesterson	Dos Palos	Oakley
Capacity - 4,700 acre-feet	Capacity - 11,700 acre-feet	Capacity - 800 acre-feet
Type - Series of earth dikes	Type - Series of earth dikes	Type - Earth dikes, plastic lined

Chipps Island Pipeline

Length - 14.7 miles; Diameter Size - 108 inches; Capacity - 450 cubic feet per second

Oakley Pumping Plant

Seven vertical turbine units - total capacity of 450 cubic feet per second at 167 feet of head

CENTRAL VALLEY PROJECT
SAN LUIS UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 10

DISTRIBUTION AND DRAINAGE SYSTEMS

Westlands Water District Distribution System

Distribution System

Type of System - Closed pipe. Buried a minimum of 4 feet
Miles of Pipe - 1,204 miles
Size of Pipe - 10 inches to 96 inches round

Drainage Collection System

Ultimate area to be drained - 300,000 acres
initially - 127,933 acres
Carrier Pipelines (Closed Joint Pipe) - Miles of Pipe - 160
Size of Pipe - 15 inches to 48 inches round
Collector Pipelines (Open Joint Pipe) - Miles of Pipe - 930
Size of Pipe - 10 inches to 24 inches round

Land and Rights

Quantity - 64,770 acres
Total Estimated Cost - $97,532,000
Cost Per Acre - $1,506
Acquisition - 22 percent complete as of September 30, 1985.

Relocation

Total Estimated Cost - $15,218,000
Percent Complete - 86 percent as of September 30, 1985

CENTRAL VALLEY PROJECT
SAN LUIS UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 11

Items:	Length (mile)	Total cost	Cost to September 30, 1985
Highways and Detours			
Relocated Highway 152	12.4	$9,389,251	$9,389,251
Reservoir Detour	3.0	450,985	450,985
County Road Relocations			
Little Panoche Creek Dam	2.0	256,933	256,933
San Luis Canal	1.8	68,559	68,559
San Luis Drain Relocations	Various	870,000	280,350
Other Relocations			
Transmission and Telegraph Lines	67.2	923,717	923,717
Gas and Oil Lines		1,418,134	1,418,134
Southern Pacific Railroad - Reach 5	12.0	131,785	131,785
Westlands Water District Distribution and Drainage System	Various	1,708,636	162,305
TOTAL		$15,218,000	$13,082,019

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE:	Completion Date:	$ Complete	Date
CENTRAL VALLEY PROJECT, AUBURN-FOLSOM SOUTH UNIT, CALIFORNIA	1/	1/ 26	1/31/86

AUTHORIZATION:
Public Law 89-161, September 2, 1965

LAND CERTIFICATION:	DEFINITE PLAN REPORT:	BENEFIT COST RATIOS Based on Direct Benefits	Based on Total Benefits	Date
July 20, 1967 3/	To be submitted as required	1.8 2/	1.9 2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 14/	$2,093,948,000	Allotments to September 30, 1985	$ 338,134,465
Total Federal Obligations(Other-Dept. of Energy)	68,494,000	Allotments for FY 1986 a/	1,500,000
Net Property and Other Transfers:			
Federal Participation	970,000		
Non-Federal Participation		Allotments to Date	$ 339,634,465
Adjustment 3/	151,773,000	Allotments Required for FY 1987	1,000,000
Total to be Allocated	$2,315,185,000	Balance to Complete after FY 1987	$1,753,313,535

ALLOCATIONS 4/		*REPAYMENT*		*AMOUNTS PER ACRE*		
Irrigation	$1,202,454,000	Amount Repaid by:		Irrig. Invest/Acre	$2,890	Payment Capacity per Acre-Foot: $8.10 to $40.30
Power	394,572,000	Irrigators 9/	$1,058,855,000	Repayment of Investment per Acre:		
M&I Water	423,880,000	Power 10/	538,171,000			
Recreation 5/	125,415,000	M&I Water 10/	423,879,000	By Irrigators	2,491	Annual Charges:
F&WL 6/	50,623,000			By Power Revenues	399	O&M
Flood Control	28,401,000	Local Interests 11/	11,103,000			Construction
Deferred Use 7/	2,425,000	Deferred Use 7/	2,425,000			
Hwy Improvement	74,808,000					
Other 8/	12,607,000	Nonreimbursable 12/	280,752,000			
Total	$2,315,185,000		$2,315,185,000			

STATUS OF REPAYMENT CONTRACT: Contracts executed with East Bay Municipal Utility District, Sacramento Municipal Utility District, Foresthill Public Utility District, and Placer County Water Agency. Negotiations will continue with Central San Joaquin Water Conservation District, Galt Irrigation District, Mather Air Force Base, Naval Facilities Engineering Command, North San Joaquin Water Conservation District, Omochumne-Hartnell Water District, Sacramento County Water Agency, San Joaquin County Flood Control and Water Conservation District, Stockton-East Water District, Woodbridge Irrigation District, and Woodbridge Water Users Conservation District for water from Folsom South Canal after the 1974 court injunction is lifted.

STATUS OF NEPA COMPLIANCE: Folsom South Canal Supplement scheduled to be filed with Environmental Protection Agency; draft, September 1987, final September 1988. 13/

DESCRIPTION: This unit located in the east-central part of the Sacramento-San Joaquin Valley will provide full irrigation to 28,300 acres, supplemental water to 387,750 acres, and 332,000 acre-feet annually for municipal and industrial

PROJECT DATA SHEET - 2
CENTRAL VALLEY PROJECT
Auburn-Folsom South Unit, California

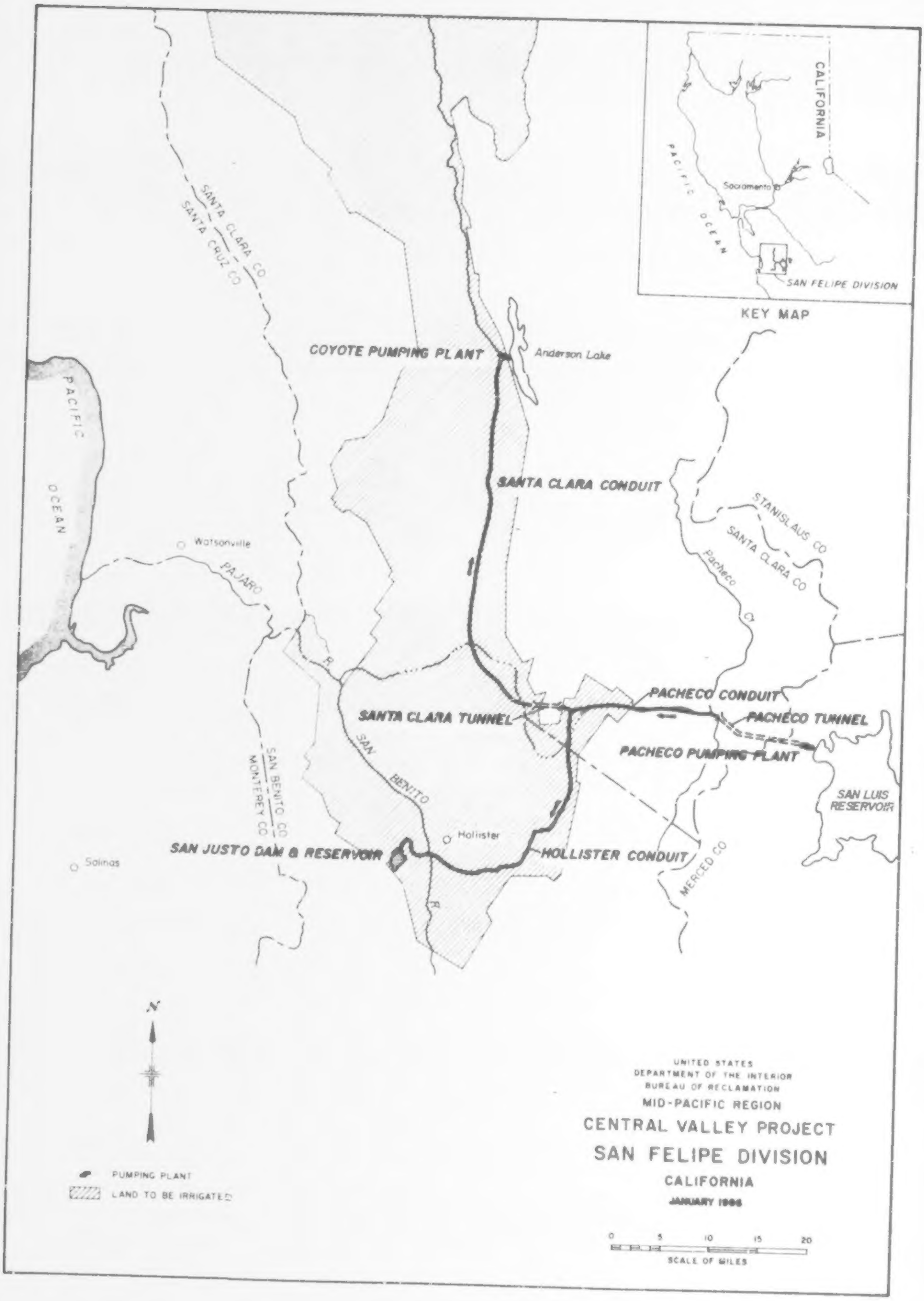
use. The power installation at Auburn will have an initial capacity of 300,000 kilowatts, consisting of two units of 150,000 kilowatts each, with provision for ultimate development of the hydroelectric capacity, now estimated to consist of an additional two units of 150,000 kilowatts each. The installation of the ultimate capacity will require additional authorization. This unit will also provide recreation, fish and wildlife, and flood control benefits.

OTHER INFORMATION: Funds for preconstruction planning and initial acquisition of land and rights were appropriated in FY 1966 and for construction in FY 1967. The National Resources Defense Council, Inc. vs. Stamm, Case No. S-2663 in the U.S. District Court, Eastern District of California, was filed in December 1972. By order of the court in 1974, in the above case, the Bureau of Reclamation was ordered to notify the court and all parties to that action as soon as the decision is made by the Secretary of the Interior to construct Reaches 3, 4, or 5 of the Folsom South Canal and not to commence such construction until at least 60 days after said notice is given nor can he acquire any lands for that construction or enter into any water service contracts for American River Division water. The opposition to the Folsom South Canal results from a possible decrease in American River minimal flows due to proposed diversions. The controversy is expected to continue over selection of solutions proposed and the court retains jurisdiction over canal Reaches 3, 4, and 5 because of these problems. The Bureau of Reclamation is in the process of preparing a report and environmental statement for the alternative studies. In view of the controversial nature of the many issues and other matters relating to the subject and the divergent interests of the parties involved, the Bureau plans to complete the report and the draft supplementary environmental statement on the alternative studies by September 1987. After review, the documents will be finalized and will be available for use in the total decision process of all involved.

A major earthquake on August 1, 1975, with the epicenter near Oroville Dam in northern California raised safety questions that prompted extensive investigations of the Foothills fault system and the Auburn Dam area. The studies resulted in the development of seismic loading parameters which were released by the Secretary of the Interior in July 1979. The parameters specify a maximum credible earthquake with magnitude of 6.5 and 5 inches of movement in the foundation as the minimum criteria to be met by any dam proposed for construction in the Auburn area. On December 30, 1980, the Secretary announced his decision that a safe dam could be constructed at the Mile 20 site and that a concrete gravity dam is the most appropriate design. When this decision was released, the Secretary asked that a number of detailed studies be completed for presentation to Congress. The Folsom South-Lower American River Studies will be updated and completed. These studies will provide the basis for legislation amending the Auburn-Folsom South Unit Act of 1965 which would then permit construction of the modified unit and water contracting to proceed. The studies have been delayed because of the need for a value engineering study.

Footnotes:

1/ Water is now available from the first 27 miles of the Folsom South Canal. In addition, Sugar Pine Dam and the Forest Hill conveyance system have been completed. Initial power schedule is dependent upon completion of the Folsom South-Lower American River Studies and legislation amending the Auburn-Folsom South Unit Act of 1965.


CALIFORNIA
PACIFIC OCEAN
Sacramento
SAN FELIPE DIVISION
KEY MAP
SANTA CLARA CO
SANTA CRUZ CO
COYOTE PUMPING PLANT
Anderson Lake
PACIFIC OCEAN
SANTA CLARA CONDUIT
Watsonville
PAJARO
STANISLAUS CO
SANTA CLARA CO
Pacheco
Cr
R
PACHECO CONDUIT
PACHECO TUNNEL
SANTA CLARA TUNNEL
PACHECO PUMPING PLANT
SAN BENITO
SAN BENITO CO
MONTEREY CO
SAN LUIS RESERVOIR
Hollister
SAN JUSTO DAM & RESERVOIR
HOLLISTER CONDUIT
MERCED CO
Salinas
R
N
PUMPING PLANT
LAND TO BE IRRIGATED
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
SAN FELIPE DIVISION
CALIFORNIA
JANUARY 1966
0
5
10
15
20
SCALE OF MILES

PROJECT DATA SHEET - 3
CENTRAL VALLEY PROJECT
Auburn-Folsom South Unit, California

Footnotes: (continued)

2/ The total benefit-cost ratio remained unchanged at 1.9 and direct benefit-cost ratio increased from 1.7 to 1.8 as presented in the FY 1986 Budget Justifications. Direct irrigation benefits increased due to higher values for ground-water pumping cost savings and higher per acre-foot benefits. Indirect irrigation benefits increased because of higher per acre-foot benefits. Municipal and industrial benefits increased because a higher interest rate was used for calculating the annual equivalent value. Power, recreation, flood control, and fish and wildlife benefits increased due to indexing. The ratios were computed using the authorized interest rate of 3-1/8 percent.

3/ Represents interest during construction which increased $12,422,000 due, in part, to an error in the calculations for the Department of Energy facilities for the FY 1986 Budget Justifications.

4/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$1,182,082,000	$1,202,454,000
Power	391,570,000	394,572,000
Municipal and Industrial Water	404,482,000	423,880,000
Recreation	123,934,000	125,415,000
Fish and Wildlife	49,785,000	50,623,000
Flood Control	27,930,000	28,401,000
Deferred Use	2,425,000	2,425,000
Highway Improvements	74,808,000	74,808,000
Other	12,607,000	12,607,000
Total	$2,269,623,000	$2,315,185,000

PROJECT DATA SHEET - 4
CENTRAL VALLEY PROJECT
Auburn-Folsom South Unit, California

Footnotes: (continued)

Explanation	Amount of change
Cost indexing (October 1985 to October 1986)	+33,177,000
Changes in quantities or estimates: repairs to diversion tunnel, contract modifications on Sugar Pine recreation facilities, transfer stipulations for Sugar Pine facilities	-363,000
Interest during construction	+12,422,000
New or deleted features: New Modifications to the downstream cofferdam	+40,000
Other: reestimate of minor contract and noncontract costs, crop damage payments	+286,000
Total	+45,562,000

5/ Includes reimbursable non-Federal recreation, $11,103,000, and nonreimbursable recreation of $114,312,000. Increase in the irrigation function is due to increased costs of Auburn Dam and Reservoir. The power function increased due to increases in interest during construction for Department of Energy facilities and the cost of Auburn Powerplants. The Municipal and Industrial Water function increased due to higher costs of Auburn and Folsom South facilities and a higher share of interest during construction allocated to this function.

6/ Includes nonreimbursable waterfowl conservation, $21,401,000; the nonreimbursable functions of fish and wildlife enhancement, $5,025,000; anadromous fishery, $8,380,000; and wildlife refuge, $15,817,000.

7/ Authorized by Public Law 89-161 to provide capacity in Folsom South Canal to serve the future Eastside Division.

8/ For cultural resources activities (Public Law 93-291).

9/ An amount of $37,000 is covered by existing contracts. Negotiations with the water users will be renewed in compliance with the 1974 court order. See the Project Data Sheet of the Central Valley Project.

PROJECT DATA SHEET - 5
CENTRAL VALLEY PROJECT
Auburn-Folsom South Unit, California

Footnotes: (continued)

10/ Due to operational and financial integration, repayment by the power and municipal and industrial functions, including aid to irrigation, is appropriately determined only in the composite repayment analysis of the total authorized Central Valley Project. To illustrate repayment for this unit, part of the net revenues from power and municipal and industrial functions available for repayment of the total project is shown. See the Project Data Sheet of the Central Valley Project for the repayment analysis of these functions.

11/ Reimbursable allocations to recreation, $11,103,000 to be repaid by local interests under Section 3 of the authorizing act.

12/ Includes flood control, $28,401,000; fish and wildlife enhancement, $5,025,000; anadromous fishery, $8,380,000; wildlife refuge, $15,817,000; recreation, $114,312,000; highway improvements, $74,808,000; cultural resources activities, $12,607,000; and waterfowl conservation, $21,402,000.

13/ Projectwide final environmental statement was filed with Council on Environmental Quality November 13, 1972. Supplement to final filed with Council on Environmental Quality August 6, 1973. Amendment to final filed with Council on Environmental Quality September 20, 1974. Supplemental No. 2 filed with Environmental Protection Agency September 23, 1980. Foresthill Divide area final filed with Council on Environmental Quality May 25, 1976.

14/ Appropriations authorized are $1,404,205,000 (October 1986). The comparable Federal obligation is $2,093,948,000 which exceeds the appropriation ceiling by more than the amount of contingencies included in the obligation. Appropriate congressional committees will be advised of the ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $64,500, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery ates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

CENTRAL VALLEY PROJECT
AUBURN-FOLSOM SOUTH UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 6

CONSTRUCTION PROGRAM:

Auburn Dam and Reservoir - Included in Estimate

Dam:
Type - Concrete gravity
Structural Height - 685 feet
Crest Length - 4,150 feet

Spillway:
Type - one chute - six submerged gated orifices per chute
Design Discharge - 330,000 cubic feet per second

Reservoir Capacity:
Total Storage - 2,300,000 acre-feet

Auburn Powerplant

Initial authorized powerplant - two units with total plant capacity of 300,000 kilowatts. Provisions for two additional units of 150,000 kilowatts.

Sugar Pine Dam and Reservoir

Dam:
Type - Zoned earthfill
Structureal Height - 200 feet
Crest Length - 675 feet
Base Width - 1,000 feet

Spillway:
Type - Ungated chute
Design Discharge - 13,200 cubic feet per second

Reservoir Capacity:
Total Storage - 7,000 acre-feet

Foresthill Conveyance System - Length - 18.1 miles

Folsom South Canal - Length - 26.7 miles completed, 42.1 miles to be constructed; capacity - 125 to 3,500 cubic feet per second; bottom width - 4.0 to 34.0 feet; water depth - 4.1 to 17.8 feet

Folsom South Distribution System - Length - 133.1 miles of distribution laterals and 1,297 miles of drainage laterals

CENTRAL VALLEY PROJECT
AUBURN-FOLSOM SOUTH UNIT, CALIFORNIA
PHYSICAL DATA ON STRUCTURES - 7

Land and Rights

Quantity - 35,719 acres
Total Estimated Cost - $61,075,000
Cost per Acre - $1,710
Acquisition - 30 percent complete as of September 30, 1985

Relocation

Total Estimated Cost - $200,486,000
Percent Complete - 16 percent as of September 30, 1985

Items:	Total cost	Cost to September 30, 1985
California State Highway No. 49 and roads, bridges, utilities, and transmission lines		
In the Auburn Dam and Reservoir area	$185,380,952	$28,423,042
In the Foresthill Divide area	322,048	322,048
Folsom South Canal and distribution and drainage systems	17,143,000	3,217,000
TOTAL	$202,846,000	$31,962,090

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE:	:Completion Date:	% Complete	: Date
CENTRAL VALLEY PROJECT, SAN FELIPE DIVISION, CALIFORNIA	: 1992 1/	: 1/ 78	:1/31/86

	BENEFIT COST RATIOS		
AUTHORIZATION:	:Based on Direct: Benefits	:Based on Total: Benefits	: Date
Public Law 90-72, August 27, 1967			
LAND CERTIFICATION: August 20, 1975: DEFINITE PLAN REPORT: Status Report 4/ January 19, 1979 3/ : Final to Commissioner, October 9, 1981	: 1.8 2/	: 2.1 2/	:10/1/86

SUMMARIZED FINANCIAL DATA

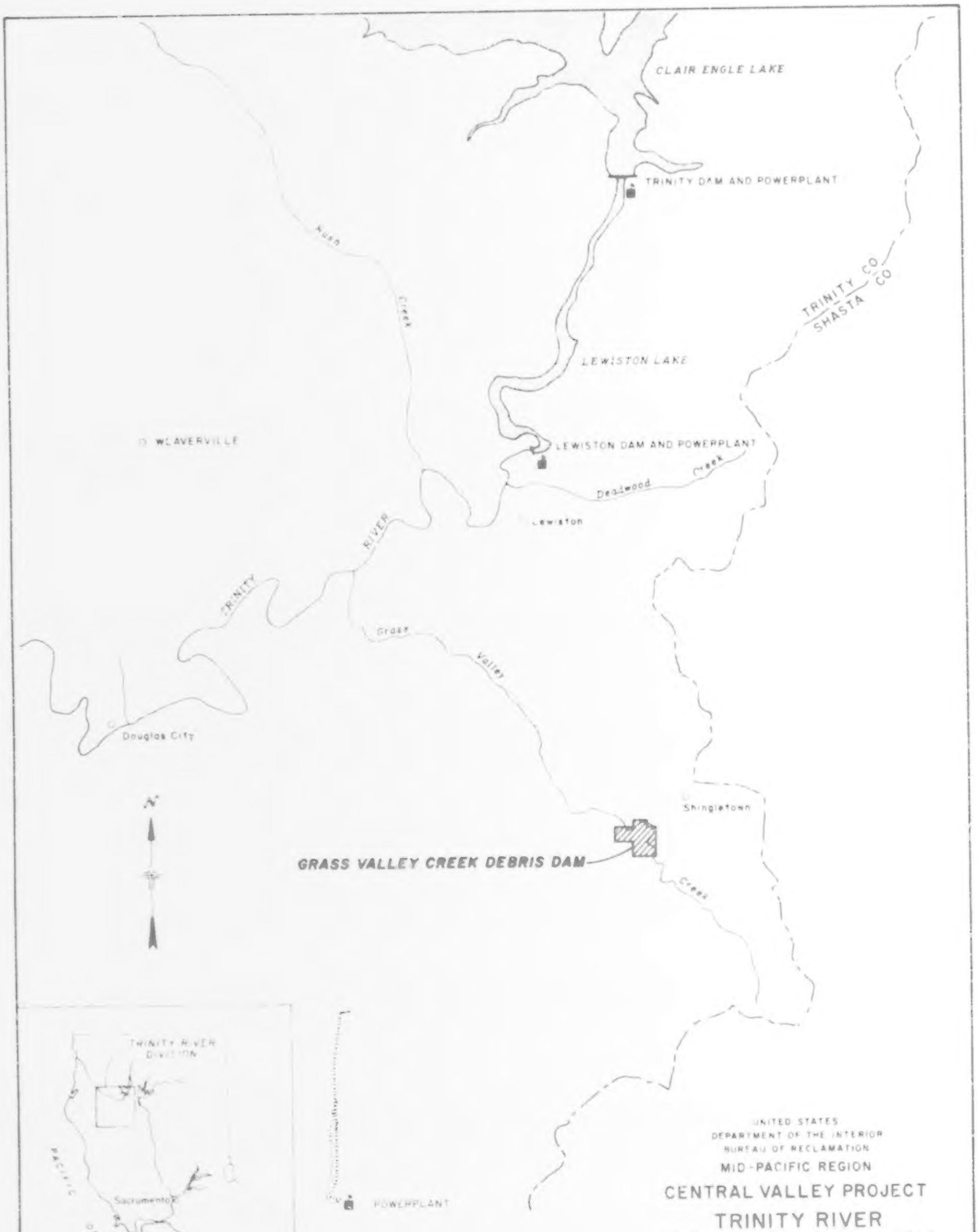
Total Federal Obligations(Reclamation) 15/	$ 342,410,000	Allotments to September 30, 1985	$ 247,311,203
Total Federal Obligations(Other-Dept. of Energy)	5,043,000	Allotments for FY 1986 a/	35,497,000
Net Property and Other Transfers:			
Federal Participation	106,000		
Non-Federal Participation 5/	50,000	Allotments to Date	282,808,203
Adjustment 6/	33,618,000	Allotments Required for FY 1987	10,642,000
Total to be Allocated	$ 381,227,000	Balance to Complete after FY 1987	$ 48,959,797

ALLOCATIONS 7/		REPAYMENT		AMOUNTS PER ACRE		
Irrigation	$ 141,714,000	Amount Repaid by:		Irrig. Invest/Acre	$3,156	Payment Capacity per Acre-Foot: $12.50 to $47.50
Power		Irrigators 10/	$ 124,813,000	Repayment of Investment per Acre:		
M&I Water	213,233,000	Power 11/	16,901,000			
Recreation 8/	12,796,000	M&I Water 11/	213,233,000	By Irrigators	2,780	Annual Charges:
F&WL	10,690,000	Local Interest Payment for Share of Recreation 12/	146,000	By Power Revenues	376	O&M
Flood Control						Construction
Navigation						
State-County						
Other 9/	2,794,000	Nonreimbursable 13/	26,134,000			
Total	$ 381,227,000		$ 381,227,000			

STATUS OF REPAYMENT CONTRACT: A water-service contract with the Santa Clara Valley Water District, the major water user, was executed June 7, 1977, and validated November 10, 1977. Water-service contract with San Benito County Water Conservation and Flood Control District was executed April 15, 1978, and validated June 29, 1978. A water-service contract with Watsonville interests is scheduled for execution in January 1987 and validation in March 1987

STATUS OF NEPA COMPLIANCE: Projectwide - final environmental statement was filed with Council on Environmental Quality March 8, 1976. Negative determination (NDN 78-4) for conveyance system modification signed March 20, 1978. An environmental statement on the Watsonville area is scheduled to be filed with the Environmental Protection Agency; draft, January 1987, final, May 1987.

DESCRIPTION: This division is located in the central coastal area of California south of San Francisco and embraces the Santa Clara Valley in Santa Clara County, north portion of San Benito County, southern portion of Santa Cruz County, and the northern edge of Monterey County. The division will provide supplemental water to 44,900 14/ acres and provide


CLAIR ENGLE LAKE
TRINITY DAM AND POWERPLANT
Rush Creek
TRINITY CO.
SHASTA CO.
LEWISTON LAKE
WEAVERVILLE
LEWISTON DAM AND POWERPLANT
Deadwood Creek
Lewiston
TRINITY RIVER
Grass Valley Creek
Douglas City
Shingletown
N
GRASS VALLEY CREEK DEBRIS DAM
TRINITY RIVER DIVISION
PACIFIC OCEAN
Sacramento
KEY MAP
POWERPLANT
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION
CENTRAL VALLEY PROJECT
TRINITY RIVER
RESTORATION PROGRAM
CALIFORNIA
JANUARY 1986
0
1
2
3
4
SCALE OF MILES

135,400 14/ acre-feet of water annually for municipal and industrial use. Water from San Luis Reservoir will be transported to the service area through Pacheco Tunnel and other principal features which include 8.1 miles of tunnels, 46.9 miles of closed conduits, one pumping plant, and one small reservoir. The Pacheco Tunnel inlet was constructed under authority contained in the San Luis Unit Authorization Act.

OTHER INFORMATION: Funds were first appropriated to initiate preconstruction planning in FY 1970 and to begin construction in FY 1975. The system to serve the Watsonville subarea had been tentatively deleted; however, at the request of the city of Watsonville, a study has been initiated to determine the engineering and economic feasibility of providing water service to the Watsonville subarea. The Watsonville facilities are included in the FY 1987 Budget Justifications presentation with funding proposed for gathering design data and preparation of designs and specifications.

Footnotes:

1/ The facilities which will provide water service to the Hollister and Santa Clara subareas will be completed in fiscal year 1987 as stated in the FY 1986 Budget Justifications. The completion date has been extended to include the Watsonville facilities which are scheduled to complete in fiscal year 1992.

2/ The total benefit-cost ratio decreased from 2.3 to 2.1 and the direct benefit-cost ratio remained unchanged at 1.8 as presented in the FY 1986 Budget Justifications. Direct and total irrigation benefits decreased due to lower estimated benefits per acre-foot. Municipal and industrial, fish and wildlife and recreation benefits increased due to indexing. The ratios were computed using the authorized interest rate of 3-1/8 percent.

3/ Hollister and Santa Clara service areas were certified on August 20, 1975 and the Watsonville service area was certified on January 19, 1979.

4/ The July 1981 Definite Plan Report did not include the required up-to-date revised cost allocation and repayment analysis; therefore, the Definite Plan Report was retitled "Status Report on the San Felipe Division," and the cost allocation and repayment analysis will be prepared after construction. A Status Report on the Watsonville Facilities is scheduled to be sent to the Commissioner: draft, January 1987, final, May 1987.

5/ Contribution by the San Felipe Committee for preconstruction studies.

6/ This amount consists of interest during construction of $25,236,000 and a transfer of $8,382,000 for the cost of the inlet to Pacheco Tunnel built concurrently with San Luis Reservoir. The change in interest during construction is due to: correction of an oversight in the computation of interest during construction in the FY 1986 Budget Justification; deletion of some of the facilities being constructed by the Department of Energy; and the addition of the Watsonville facilities.

PROJECT DATA SHEET - 3
CENTRAL VALLEY PROJECT
San Felipe Division, California

Footnotes: (continued)

7/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$104,858,000	$141,714,000
Municipal and Industrial Water	214,433,000	213,233,000
Recreation	13,148,000	12,796,000
Fish and Wildlife	10,986,000	10,690,000
Other	2,794,000	2,794,000
Total	$346,219,000	$381,227,000

Explanation	Amount of change
Design changes: supervisory control system	+190,000
Changes based on bids: Coyote Pumping Plant, Hollister outlet works, Supervisory Control System	-5,894,000
Changes in quantities or estimates: contract modifications on Pacheco Tunnel, Pacheco Pumping Plant, Santa Clara Tunnel, Hollister Conduit, section 2, Pacheco Conduit, sections 1 and 2, Hollister Outlet Works	+1,614,000
Interest during construction	-1,649,000
New or deleted features: New - Watsonville facilities	+49,000,000
Others: reevaluation of minor contract and noncontract costs, relocation costs, land and rights; Department of Energy facilities	-8,253,000
Total	$+35,008,000

The irrigation allocation increased due to the addition of the Watsonville facilities.

8/ Includes reimbursable non-Federal recreation costs of $146,000 and nonreimbursable recreation costs of $12,650,000.

PROJECT DATA SHEET - 4
CENTRAL VALLEY PROJECT
San Felipe Division, California

Footnotes: (continued)

9/ For cultural resources activities (Public Law 93-291).

10/ Of this amount $83,058,000 is covered by existing water-service contracts. The remaining $41,755,000 for the Watsonville area are to be repaid by future contracts. Repayment is based on the most recent total authorized project repayment studies.

11/ Due to operational and financial integration, repayment by the power and municipal and industrial functions, including aid to irrigation, is appropriately determined only in the composite repayment analysis of the total authorized Central Valley Project. To illustrate repayment for this unit, part of the net revenues from power and municipal and industrial functions available for repayment of the total project is shown. See the Project Data Sheet of the Central Valley Project for the repayment analysis of these functions.

12/ Reimbursable allocation to recreation to be repaid by San Benito County under Section 3 of the authorizing act.

13/ Nonreimbursable includes fish and wildlife enhancement, $10,631,000; waterfowl conservation, $59,000; recreation, $12,650,000; and cultural resources activities, $2,794,000.

14/ Project goals were increased to reflect the addition of the Watsonville facilities.

15/ Appropriations authorized are $366,862,000 (October 1986 projected). This authorization is adequate to cover this project as currently proposed. The comparable Federal obligation is $362,310,000, which includes $19,900,000 for a Federal loan to San Benito County Water Conservation and Flood Control District to build a distribution system.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $1,526,371, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justification.

CENTRAL VALLEY PROJECT
SAN FELIPE DIVISION, CALIFORNIA

PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM:

Pacheco Tunnel: Length - 7.0 miles Diameter - Reach 1 - 13.0 feet circular Reach 2 - 9.5 feet circular	Capacity: 1/ 490 cubic feet per second
Pacheco Pumping Plant: 12 units - 24,000 hp total	Capacity: 1/ 490 cubic feet per second, total
Pacheco Conduit: Length - 8.0 miles Diameter - 120 inches	Capacity: 1/ 490 cubic feet per second
Santa Clara Tunnel and Conduit	
Tunnel: Length - 1.0 mile Diameter - Designed at 102 inches Constructed at 114 inches without additional cost	Capacity: 1/ 397 cubic feet per second
Conduit: Length - 21.4 miles Diameter - 96, 102, and 120 inches	Capacity: 1/ 397 cubic feet per second
Coyote Pumping Plant: 1/ Six units - 12,000 hp total	Capacity: 300 Cubic feet per second, Total
Hollister Conduit: Length - 19.2 miles Diameter - 54 and 60 inches	Capacity: 1/ 93 cubic feet per second

1/ Change from FY 1986 Budget Justifications to reflect final design requirements to meet peak flow rates.

CENTRAL VALLEY PROJECT
SAN FELIPE DIVISION, CALIFORNIA

PHYSICAL DATA ON STRUCTURES - 6

Watsonville Conduit
Length - 20.0 miles
Diameter - 42 inches

Capacity:
67 cubic feet per second

San Justo Dam and Reservoir

Dam:
Type - Earth and rockfill
Structural Height - 126 feet
Crest Length - 750 feet
Base Width - 900 feet

Spillway:
Type - Overflow
Design Discharge - 280 cubic feet per second

Reservoir Capacity:
Total Storage - 9,900 acre-feet

Land and Rights:

Quantity - 1,388 acres[1]
Total Estimated Cost - $6,971,278[1]
Cost per Acre - $5,022
Acquisition - 93 percent complete as of September 30, 1985

Relocation:

Total Estimated Cost - $389,442[1]
Percent Complete - 100 percent complete as of September 30, 1985

[1] Costs for land and rights and relocations are for Hollister and Santa Clara subareas. Costs for the Watsonville facilities are not available.

REGION:
Mid-Pacific

PROJECT DATA SHEET

PROJECT AND STATE:	Completion Date:	% Complete	Date
CENTRAL VALLEY PROJECT, TRINITY RIVER RESTORATION PROGRAM, CALIFORNIA	1995 1/	93 2/	1/31/86

AUTHORIZATION: Public Law (PL) 84-386, August 12, 1955; P.L. 96-335, September 4, 1980;P.L. 98-541, October 24, 1984	BENEFIT COST RATIOS		
	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION: None Required : DEFINITE PLAN REPORT: None Required 4/	3/	3/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 12/	$ 306,020,000	Allotments to September 30, 1985	$ 243,629,536
Total Federal Obligations (Other-Dept. of Energy)	45,525,181	Allotments for FY 1986 a/	500,000
Net Property and Other Transfers:			
Federal Participation	950,000		
Non-Federal Participation		Allotments to Date	244,129,536
Adjustment 5/	7,518,819	Allotments Required for FY 1987	4,650,000
Total to be Allocated	$ 360,014,000	Balance to Complete after FY 1987	$ 57,240,464

ALLOCATIONS 6/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	89,542,000	Amount Repaid by:		Irrig. Invest/Acre	Payment Capacity per
Power	157,378,000	Irrigators	$ 96,252,000	Repayment of Invest-	Acre-Foot:
M&I Water	15,673,000	Power 9/	175,083,000	ment per Acre:	Annual Charges:
Recreation 7/	611,000	M&I Water 9/	19,982,000	By Irrigators	O&M
F&WL 8/	$ 78,724,000	State-County	8,618,000	By Power Revenues	Construction
Flood Control	16,544,000	Local Interests			
Navigation	1,542,000	Deferred Use			
State-County					
Other		Nonreimbursable 10/	60,079,000		
Total	$ 360,014,000		$ 360,014,000		

STATUS OF REPAYMENT CONTRACT: The State of California and Trinity and Humboldt Counties have agreed to repay 15 percent of appropriated amounts. Fifty percent of appropriated amounts is to be repaid by water and power users of Central Valley Project water via existing or future water service contracts. Repayment assurance by the State of California was received September 1, 1985.

STATUS OF NEPA COMPLIANCE: Grass Valley Creek Debris Dam Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency: draft, March 1986; final, July 1986. 11/

DESCRIPTION: This division is located in northwestern California in Trinity and Humboldt Counties. The purpose is to restore the fish and wildlife populations in the Trinity River to the levels approximating that which existed immediately before the start of construction of the Trinity River Division of the Central Valley Project in California.

PROJECT DATA SHEET - 2
CENTRAL VALLEY PROJECT
Trinity River Restoration Program, California

OTHER INFORMATION: Public Law 84-386 authorized the construction of Trinity River Division. Public Law 96-335 authorized construction of sediment control facilities on Grass Valley Creek, a tributary to the Trinity River, which is to include a debris dam and a sand dredging system. Facilities for sediment control are set forth in the plan of development described in the Grass Valley Creek Sediment Control Study, April 1978, prepared for the Trinity River Basin Fish and Wildlife Task Force as part of the Trinity River Basin Comprehensive Action Program. Public Law 98-541 authorized the Trinity River Fish and Wildlife Management Program based on a March 1982 report bearing the same title. This program is to provide for the restoration of the fish and wildlife in the Trinity River Basin. Public Law 98-541 also set forth cost-sharing stipulations for the management program and included Grass Valley Creek activities in the cost sharing thereby amending Public Law 96-335 which provided that all costs for construction of the debris dam would be nonreimbursable. Currently, the Trinity River Division, the Grass Valley Creek Debris Dam and the Trinity River Fish and Wildlife Management Program are under separate appropriation ceilings.

Footnotes:

1/ Construction of Grass Valley Creek Debris Dam and the Trinity Fish Hatchery Modification are scheduled for completion in September 1989. The Trinity River Fish and Wildlife Management Program will be completed by September 1995.

2/ Construction is scheduled to be initiated in fiscal year 1987.

3/ Benefit-cost analysis cannot be applied directly to measures proposed in the restoration program because a reliable method does not exist for estimating cash value of environmental and social benefits. Also, increased numbers of fish in the Trinity River attributable directly to reduction of sediment, riffle reconstruction and other methods of habitat augmentation cannot be accurately predicted.

4/ A summary report for Grass Valley Creek Debris Dam will be prepared and will be supplementary to the State of California report which supported the authorizing legislation.

5/ Includes interest during construction of $7,519,000. $181 is subtracted for rounding.

6/ The FY 1987 budget represents the first presentation of this project.

7/ Represents nonreimbursable recreation.

Footnote (continued)

8/ Includes the following nonreimbursable costs: fish and wildlife enhancement, $10,566,000; fish and wildlife mitigation, $28,761,000; wildlife refuge, $660,000; waterfowl conservation, $1,395,000 in accordance with Public Law 95-616, November 18, 1978, whereby water provided by the Central Valley Project for waterfowl conservation shall not be reimbursable or returnable under Federal Reclamation Laws. Reimbursable costs of the Trinity River Restoration includes: State of California and Trinity and Humboldt Counties, $8,618,000; Central Valley Project water and power users, $28,724,000.

9/ Due to operational and financial integration, repayment by the power and municipal and industrial functions, including aid to irrigation, is appropriately determined only in the composite repayment analysis of the total authorized Central Valley Project. To illustrate repayment for this unit, part of the new revenues from power and municipal and industrial functions available for repayment of the total project is shown. See the Project Data Sheet of the Central Valley Project for the repayment analysis of these functions.

10/ Includes fish and wildlife enhancement, $10,566,000; fish and wildlife mitigation, $28,761,000, flood control, $16,544,000; navigation, $1,542,000; recreation, $611,000; waterfowl conservation, $1,395,000; wildlife refuge, $660,000.

11/ A Categorical Exclusion checklist for the Trinity Fish Hatchery was completed on October 6, 1983.

12/ Appropriations authorized for the Grass Valley Creek Debris Dam under Public Law 96-335 are $5,480,000 (October 1986). The comparable Federal obligation is $24,950,000, which exceeds the ceiling by more than the amount of contingencies included in the obligations; however, a less costly alternative is being considered which may allow this facility to be constructed within the appropriation ceiling. Appropriate Congressional committees will be advised of the ceiling status for this project. Current commitments will be held within the existing ceiling.

Appropriations authorized for the Trinity River Fish and Wildlife Management Program under Public Law 98-541 are $36,958,000 (October 1986). This authorization is adequate to cover this project as currently proposed.

Appropriations authorized for the Trinity River Division under Public Law 84-386 are $273,000,000 (October 1986). This authorization is adequate to cover the Trinity River Hatchery Modifcation as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $21,500, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justification.

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT, CALIFORNIA

FISCAL YEAR 1987

Work Proposed

Sacramento River Division	Program
Tehama-Colusa Canal and Facilities. - Preconstruction activities on water supply and storage facilities Tehama-Colusa Canal and Oat Dam and Reservoir will continue.	$ 70,000
Tehama-Colusa Fish Facilities. - Monitoring the results of interim action measures will complete.	70,000
Permanent Operating Facilities. - Work on permanent operating facilities will be completed.	50,000
Other Project Costs. - A contract will be awarded for modification of gate 11 on Red Bluff Diversion Dam. Preconstruction activities will continue for modification of the Tehama-Colusa Canal headworks, fishscreens, the bypass at the headworks settling basin and a barrier at the dual-purpose channel, Tehama-Colusa Fish Facilities.	870,000
Subtotal - Sacramento River Division	$1,060,000

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT, CALIFORNIA - 2

FISCAL YEAR 1987

Work Proposed	Program
San Luis Unit:	
Joint State-Federal Facilities:	
San Luis Canal. - Provides for continuation of studies for long-term solutions to problems at Arroyo Pasajero and acquisition of land for disposal of sediment.	$ 1,050,000
Federal Facilities:	
San Luis Drain. - For continuing San Luis Drain studies related to the contaminant found in drainage waters and Kesterson Reservoir.	11,500,000
Distribution and Drainage System:	
Westlands Distribution System. - For preconstruction work on Contracts 15 and 17.	100,000
Drainage Collector System. - For preconstruction work on Contracts 3D and 4D.	100,000
Subtotal - San Luis Unit	1/$12,750,000

1/ Includes non-Federal advance of $578,000 from State of California.

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT, CALIFORNIA - 3

FISCAL YEAR 1987

Work Proposed	Program
Auburn-Folsom South Unit:	
Auburn Area Facilities:	
Auburn Dam and Reservoir. -- For continuation of miscellaneous agreements with other agencies and fire protection, seismograph work, water rights applications, management of project lands, equipment rentals, etc. On December 30, 1980, Secretary Andrus announced his decision that a safe dam could be constructed at the mile 20 site and that a concrete gravity dam is the most appropriate design. The Folsom South-Lower American River Studies will be updated and completed. These studies will provide the basis for legislation amending the Auburn-Folsom South Unit Act of 1965 which would then permit construction of the modified unit and water contracting to proceed. It is possible that a contract for additional foundation work could be awarded in late FY 1986. If additional funds are needed, they will be requested when accurate amounts are known.	$1,000,000
Subtotal - Auburn-Folsom South Unit	$1,000,000

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT, CALIFORNIA - 4

FISCAL YEAR 1987

Work Proposed	Program
Miscellaneous Project Programs:	
Other Project Costs. - Provides for continuation of Delta Support Studies.	$372,000
Subtotal - Miscellaneous Project Programs	$372,000

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT - 5

FISCAL YEAR 1987

Work Proposed	Program
Trinity River Restoration Program:	
Grass Valley Creek Debris Dam. - For preconstruction activities.	$ 1,000,000
Trinity River Fish and Wildlife Management Program. - Construction activities for restoration of the fishery in the Trinity River above Grass Valley Creek, the South Fork of the Trinity River and tributaries will begin. Construction of artificial propagation facilities, fishery monitoring, land use evaluation and wildlife habitat restoration will begin.	1,346,000
Trinity Fish Hatchery Modification. - Construction of phase 1 of the hatchery modification will begin.	2,254,000
Service Facilities, Depreciation and Salvage. - Provides for purchase of office equipment, materials, supplies and services.	50,000
Subtotal - Trinity River Restoration Program.............$	4,650,000

Appropriation Title: Construction Program
Construction and Rehabilitation

CENTRAL VALLEY PROJECT, CALIFORNIA - 6

FISCAL YEAR 1987

Work Proposed	Program
San Felipe Division:	
Santa Clara Tunnel and Conduit. - Construction on section 2 of the conduit will complete.	$ 1,210,000
Pacheco Pumping Plant. - Construction on the pumping plant will complete.	1,019,000
Pacheco Conduit. - Construction of section 2 of the conduit will complete.	700,000
Coyote Pumping Plant. - Construction of the pumping plant will complete.	1,720,000
Hollister Conduit. - Construction of section 2 of the conduit will complete.	1,760,000
San Justo Dam and Reservoir. - Construction of San Justo Dam will complete.	2,354,000
Supervisory Control System. - Installation of control and monitoring equipment will complete.	536,000
Watsonville Facilities. - For preconstruction activities.	750,000
Wildlife Mitigation. - For a habitat evaluation plan.	103,000
Public Use Facilities. - Construction of public use facilities will complete.	244,000
Permanent Operating Facilities. - Purchase of operating equipment will complete.	196,000
Other Project Costs. - Work on plans and environmental work for the Watsonville area will complete.	50,000
Subtotal - San Felipe Division	$ 10,642,000
Non-Federal Participation (Central Valley Project)	-578,000
TOTAL - CENTRAL VALLEY PROJECT	$ 29,896,000

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Central Valley Project					
Sacramento River Division					
Completed Work 1/	$21,376,696	$21,376,696	---	---	---
Tehama-Colusa Canal Facilities	231,239,000	188,910,814	7,642,000	70,000	34,616,186
Tehama-Colusa Canal Distribution System	48,885,000	45,523,162	133,000	---	3,228,838
Tehama-Colusa Canal Fish Facilities	22,216,156	21,700,156	446,000	70,000	0
Permanent Operating Facilities	7,241,027	6,818,027	373,000	50,000	0
Serv. Facilities, Depreciation and Salvage.	---	36,641	---	---	(36,641)
Engineering and Design	(48,694,000)	(40,998,728)	(1,200,000)	(400,000)	(6,095,272)
Supervision and Administration	(42,404,000)	(34,960,368)	(5,237,000)	(370,000)	(1,836,632)
Relocation Costs	(1,830,000)	(1,726,747)	(---)	(---)	(103,253)
Total Construction Cost	$330,957,879	$284,365,496	$8,594,000	$190,000	$37,808,383
Other Project Costs	21,807,000	5,888,743	1,460,000	870,000	13,588,257
Total Project Cost	$352,764,879	$290,254,239	$10,054,000	$1,060,000	$51,396,640
Consolidated Expenditures and Credits	441,121	1,204,601	(19)	---	(763,461)
Total Expenditures	$353,206,000	$291,458,840	$10,053,981	$1,060,000	$50,633,179
Undelivered Orders	---	532,981	(532,981)	---	---
Total Obligations - Sacramento River Div.	$353,206,000	$291,991,821	$9,521,000	$1,060,000	$50,633,179
Method of Financing:					
Appropriation Available and Required	---	---	$1,362,000	$1,060,000	$50,633,179
Application of Prior Year Funds	---	---	4,159,000	---	---
Underfinancing	---	---	4,000,000	---	---

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
Auburn-Folsom South Unit					
Auburn Area					
Auburn Dam and Reservoir	$1,547,826,000	$212,048,985	$5,949,000	$1,000,000	1,328,828,015
Auburn Powerplant	147,138,000	8,372,852	---	---	138,765,148
Recreation Facilities	16,747,000	5,658,247	---	---	11,088,753
Permanent Operating Facilities	3,296,000	35,931	---	---	3,260,069
Fish and Wildlife Lands	1,248,000	330,345	---	---	917,655
Subtotal - Auburn Area	$1,716,255,000	$226,446,360	$5,949,000	$1,000,000	1,482,859,640
Foresthill Divide Area	$68,726,537	$68,686,537	$40,000	---	---
Folsom South Area Facilities					
Folsom South Canal	$152,862,000	$39,392,741	---	---	113,469,259
All Other Facilities	156,833,000	346,814	---	---	156,486,186
Subtotal - Folsom South Area Facilities	$309,695,000	$39,739,555	---	---	269,955,445
Service Facilities, Depreciation and Salvage	---	$2,369,996	$184,000	---	(2,553,996)
Engineering and Design	(176,762,000)	(52,427,544)	(969,000)	(100,000)	(123,265,456)
Supervision and Administration	(163,717,000)	(51,752,069)	(4,153,000)	(230,000)	(107,581,931)
Relocation Costs	(202,846,000)	(31,962,090)	(---)	---	(170,883,910)
Total Construction Cost	$2,094,676,537	$337,242,448	$6,173,000	$1,000,000	$1,750,261,089
Other Project Costs	241,488	241,488	---	---	0
Total Project Cost	$2,094,918,025	$337,483,936	$6,173,000	$1,000,000	$1,750,261,089
Consolidated Expenditures and Credits	(970,025)	(2,022,641)	170	---	1,052,446
Total Expenditures	$2,093,948,000	$335,461,295	$6,173,170	$1,000,000	$1,751,313,535
Undelivered Orders	---	518,170	(518,170)	---	---
Total Obligations - Auburn-Folsom South Unit	$2,093,948,000	$335,979,465	$5,655,000	$1,000,000	$1,751,313,535
Method of Financing:					
Appropriation Available and Required	---	---	$1,500,000	$1,000,000	$1,751,313,535
Application of Prior Year Funds	---	---	2,155,000	---	---
Underfinancing	---	---	2,000,000	---	---

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
San Luis Unit					
Joint State-Federal Facilities					
Completed Work 2/	$113,967,458	$113,967,458	---	---	---
San Luis Dam and Reservoir	96,515,230	96,495,230	$20,000	---	---
San Luis Canal	141,245,104	137,850,435	1,327,000	1,050,000	1,017,669
Permanent Operating Facilities	7,760,000	7,225,528	---	---	534,472
Subtotal - Joint State-Federal Facilities 3/	$359,487,792	$355,538,651	$1,347,000	$1,050,000	1,552,141
Federal Facilities					
Completed Work 2/	$20,922,580	$20,922,580	---	---	---
O'Neill Pumping Plant	10,651,468	10,641,468	10,000	---	---
Relift Pumping Plants for Distribution System	81,243,000	41,524,342	25,000	---	39,693,658
San Luis Canal Turnouts	16,856,000	14,705,950	160,000	---	1,990,050
San Luis Drain	646,177,000	53,786,862	15,282,000	11,500,000	565,608,138
Subtotal - Federal Facilities	$775,850,048	$141,581,202	$15,477,000	$11,500,000	607,291,846
Distribution and Drainage System					
Westlands Distribution System	$250,145,000	$160,146,981	$110,000	$100,000	89,788,019
Westlands Drainage Collector System	76,408,000	19,691,434	100,000	100,000	56,516,546
Integration of Gravity and Ground-water Pumping	77,167	77,167	---	---	---
Subtotal - Distribution and Drainage System	$326,630,167	$179,915,602	$210,000	$200,000	146,304,565
Service Facilities, Depreciation and Salvage	---	$959,084	$66,000	---	(1,025,084)

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
San Luis Unit (Continued)					
Engineering and Design	(118,734,000)	(65,772,271)	(6,500,000)	(5,000,000)	(41,461,729)
Supervision and Administration	(145,120,000)	(80,388,584)	(9,287,000)	(7,001,000)	(48,443,416)
Relocation Costs	(15,218,000)	(13,082,019)	---	---	(2,135,981)
Total Construction Cost	$1,461,968,007	$677,994,539	$17,100,000	$12,750,000	$754,123,468
Other Project Costs	6,851	6,851	---	---	---
Total Project Cost	$1,461,974,858	$678,001,390	$17,100,000	$12,750,000	$754,123,468
Other Consolidated Expenditures and Credits	3,409,861	3,401,649	374	---	7,838
Non-Federal Noncash Contributions	(31,581,719)	(29,160,224)	(100,000)	---	(2,321,495)
Total Expenditures	$1,433,803,000	$652,242,815	$17,000,374	$12,750,000	$751,809,811
Undelivered Orders	---	988,374	(988,374)	---	---
Total Obligations - San Luis Unit . . .	$1,433,803,000	$653,231,189	$16,012,000	$12,750,000	$751,809,811
Method of Financing:					
Appropriation Available and Required . . .	---	---	$12,490,000	$12,172,000	$752,432,537
Application of Prior Year Funds	---	---	2,881,000	---	---
Non-Federal Participation	---	---	641,000	578,000	(622,726)

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
CVP--Miscellaneous Project Programs					
Delta Division					
Completed Work 4/	$119,828,492	$119,828,492	---	---	---
Subtotal - Delta Division	$119,828,492	$119,828,492	---	---	---
Friant Division					
Completed Work 5/	$84,454,437	$84,454,437	---	---	---
Friant-Kern Canal	96,947,400	96,720,400	$227,000	---	---
Subtotal - Friant Division	$181,401,837	$181,174,837	$227,000	---	---
Shasta Division					
Completed Work 6/	$170,126,595	$170,126,595	---	---	---
Subtotal - Shasta Division	$170,126,595	$170,126,595	---	---	---
American River Division					
Completed Work 7/	$106,082,017	$106,082,017	---	---	---
El Dorado Distribution System	25,000,000	23,336,217	1,500,000	---	163,783
Subtotal - American River Division	$131,082,017	$129,418,234	$1,500,000	---	$163,783
Trinity River Division					
Completed Work 8/	$243,629,536	$243,629,536	---	---	---
Subtotal - Trinity River Division	$243,629,536	$243,629,536	---	---	---
New Melones Project Facilities	$3,456,681	$3,297,681	$159,000	---	---
Allen Camp Unit	$1,113,012	$1,113,012	---	---	---
Project General					
Completed Work 9/	$11,818,559	$11,818,559	---	---	---
Subtotal - Project General	$11,818,559	$11,818,559	---	---	---

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
CVP--Miscellaneous Project Programs (Continued)					
Engineering and Design	(55,592,000)	(55,367,766)	(150,000)	(---)	(74,234)
Supervision and Administration	(49,531,000)	(46,853,556)	(566,000)	(372,000)	(1,739,444)
Total Construction Cost	$618,827,193	$616,777,410	$1,886,000	---	$163,783
Other Project Costs	4,718,669	2,070,745	383,000	372,000	1,892,924
Total Project Cost	$623,545,862	$618,848,155	$2,269,000	$372,000	$2,056,707
Non-Federal Cash Contributions	(10,000)	(10,000)			
Other Consolidated Expenditures and Credits	(14,265,862)	(14,506,894)	687	---	240,344
Total Expenditures	$609,270,000	$604,331,262	$2,269,687	$372,000	$2,297,051
Undelivered Orders	---	254,687	(254,687)	---	---
Total Obligations - CVP-Miscellaneous	$609,270,000	$604,585,949	$2,015,000	$372,000	$2,297,051
Method of Financing:					
Appropriation Available and Required	---	---	$1,063,000	$372,000	$2,297,051
Application of Prior Year Funds	---	---	952,000	---	---

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
Method of Financing:					
Appropriation Available and Required . . .	---	---	$1,063,000	$372,000	$2,297,516
Application of Prior Year Funds	---	---	952,000	---	---
Trinity River Restoration Program					
Grass Valley Creek Debris Dam	$24,950,000	$950,000	$100,000	$1,000,000	$22,900,000
Trinity River Fish and Wildlife Management P	32,500,000	---	350,000	1,346,000	30,804,000
Trinity Fish Hatchery Modification	5,890,000	---	---	2,254,000	3,636,000
Service Facilities, Depreciation and Salvage	---	---	50,000	50,000	(100,000)
Engineering and Design	(7,000,000)	(650,000)	(100,000)	(1,235,000)	(5,015,000)
Supervision and Administration	(7,945,000)	(300,000)	(400,000)	(700,000)	(6,545,000)
Total Construction and Project Cost . .	63,340,000	950,000	500,000	4,650,000	$57,240,000
Consolidated Expenditures and Credits . . .	(950,000)	(950,000)	---	---	0
Total Expenditures	62,390,000	---	500,000	4,650,000	$57,240,000
Undelivered Orders	---	---	---	---	---
Total Obligations - Trinity R. Restoratio	62,390,000	---	500,000	4,650,000	$57,240,000
Method of Financing:					
Appropriation Available and Required . . .	---	---	$500,000	$4,650,000	$57,240,000

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
Central Valley Project					
San Felipe Division					
Pacheco Tunnel	$82,434,526	$82,434,526	---	---	---
Pacheco Pumping Plant	31,782,604	28,123,604	2,640,000	1,019,000	---
Santa Clara Tunnel and Conduit	77,420,272	68,324,272	7,886,000	1,210,000	---
Pacheco Conduit	33,426,625	27,473,625	5,253,000	700,000	---
Coyote Pumping Plant	15,867,130	4,305,130	9,842,000	1,720,000	---
Hollister Conduit	26,354,211	14,725,211	9,869,000	1,760,000	---
San Justo Dam and Reservoir	32,162,910	20,820,910	8,988,000	2,354,000	---
Supervisory Control System	1,432,995	174,995	722,000	536,000	---
Watsonville Facilities	49,000,000	---	1,100,000	750,000	47,150,000
Wildlife Mitigation	230,438	35,438	92,000	103,000	---
Public Use Facilities	254,907	907	10,000	244,000	---
Permanent Operating Facilities	337,137	6,137	135,000	196,000	---
Service Facilities, Depreciation and Salvage	---	389,618	---	---	(389,618)
Engineering and Design	(39,315,000)	(29,299,188)	(4,000,000)	(2,000,000)	(4,015,812)
Supervision and Administration	(40,110,000)	(26,577,997)	(7,372,000)	(3,026,000)	(3,134,003)
Relocation Costs	(389,442)	(389,442)	(---)	(---)	(---)
Total Construction Cost	$350,703,755	$246,814,373	$46,537,000	$10,592,000	$46,760,382
Other Project Costs	244,503	144,503	50,000	50,000	---
Total Project Cost	$350,948,258	$246,958,876	$46,587,000	$10,642,000	$46,760,382
Non-Federal Cash Contributions	(50,000)	(50,000)	---	---	---
Other Consolidated Expenditures and Credits	(8,488,258)	(8,588,390)	717	---	99,415
Total Expenditures	$342,410,000	$238,320,486	$46,587,717	$10,642,000	$46,859,797
Undelivered Orders	---	3,103,797	(3,103,797)	---	---
Total Obligations - San Felipe Division	$342,410,000	$241,424,283	$43,483,920	$10,642,000	$46,859,797
Method of Financing:					
Appropriation Available and Required	---	---	$35,497,000	$10,642,000	$46,859,797
Application of Prior Year Funds	---	---	5,886,920	---	---
Underfinancing	---	---	2,100,000	---	---

CENTRAL VALLEY PROJECT

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program (Continued)					
Total Obligations - Central Valley Project	$5,138,657,000	$2,370,842,242	$77,186,920	$30,474,000	$2,660,153,838
Method of Financing:					
Appropriation Available and Required	---	---	$52,412,000	$29,896,000	$2,660,776,564
Application of prior year funds	---	---	16,033,920	---	---
Underfinancing	---	---	8,100,000	---	---
Non-Federal Advances	---	---	641,000	578,000	($622,726)

CENTRAL VALLEY PROJECT

Footnotes:

1/ Includes Red Bluff Diversion Dam and Reservoir, Corning Canal and Facilities, Corning Water District Distribution System, Recreation Facilities and Operation and Maintenance Housing.

2/ Completed Work Includes San Luis Pumping-Generating Plant, O'Neill Dam, Forebay and Wasteway, San Luis Pumping-Generating Plant Switchyard, Dos Amigos Pumping Plant, Dos Amigos Pumping Plant Switchyard, Los Banos Detention Dam and Reservoir, Little Panoche Detention Dam and Reservoir, O'Neill Pumping Plant Intake Channel, Pleasant Valley Pumping Plant, O'Neill Pumping Plant Switchyard, Pleasant Valley Pumping Plant Switchyard, Municipal and Industrial Facilities for Huron, Temporary Camp, Federal Permanent Operating Facilities, Coalinga Canal and Pump Intake, Recreation and Fish and Wildlife Facilities, and Joint State-Federal Service Facilities, Depreciation and Salvage.

3/ All items in Joint State-Federal Facilities are funded 55 percent State and 45 percent Federal.

4/ Includes totals for Tracy Pumping Plant and Intake Channel, Delta Cross Channel, Contra Costa Water and Plainview Water Distribution Systems, Tracy-Contra Costa-Clayton Ygnacia Substation, Tracy Switchyard, Permanent Operating Facilities, Delta Fish Protective Facilities, Contra Costa Canal System, and Delta-Mendota Canal.

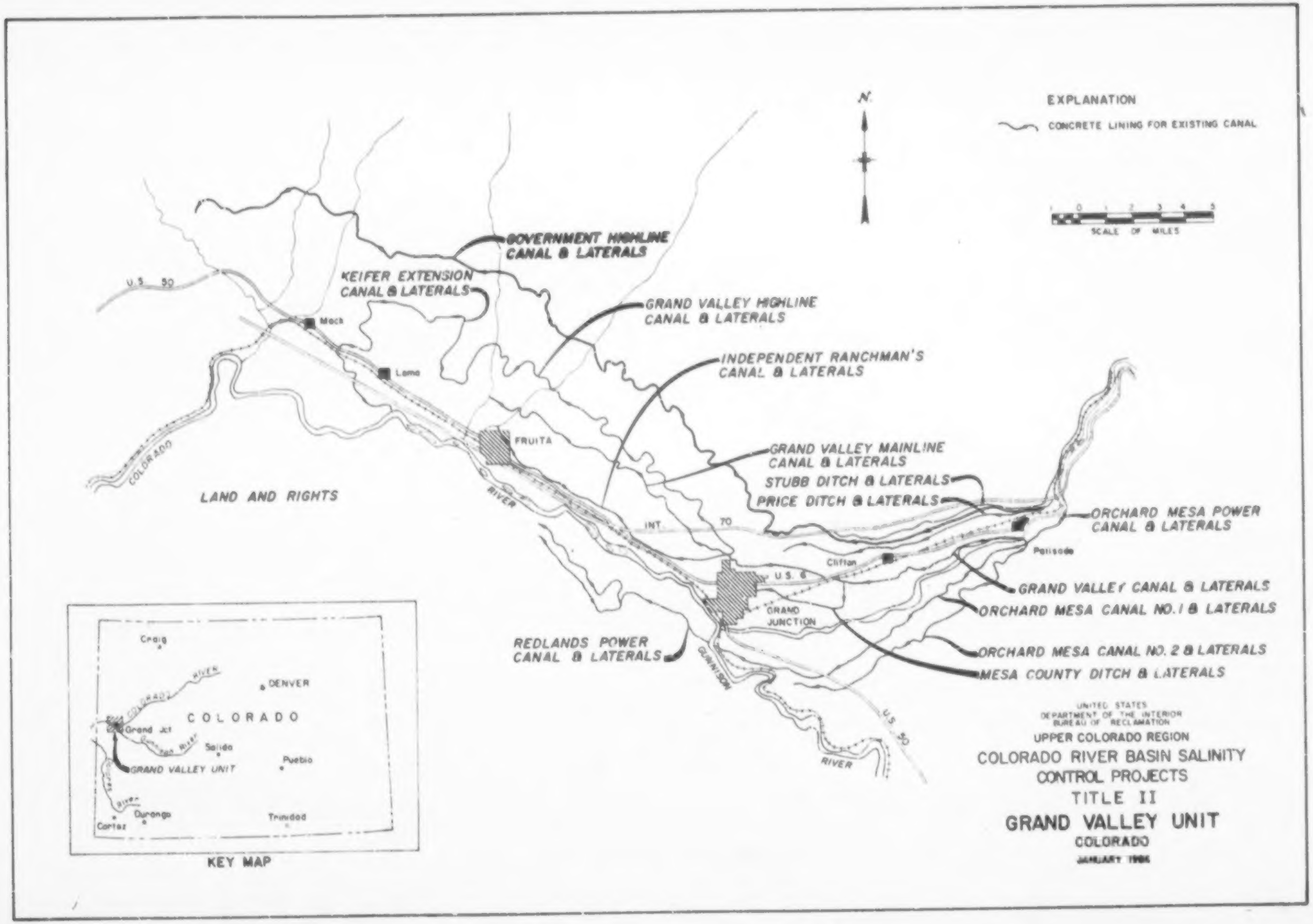
5/ Includes Friant Dam and Reservoir, Madera Canal, Madera Distribution System, Friant-Kern Distribution Systems, and Permanent Operating Facilities.

6/ Includes Shasta and Keswick Dams and their associated power facilities and Permanent Operating Facilities.

7/ Includes totals for Folsom Dam, Reservoir, and Power Facilities, Sky Park Dam and Conduit, Nimbus Fish Protective Facilities, and Permanent Operating Facilities.

8/ Includes Lewiston Diversion Dam, Powerplant and Fish Facilities, Trinity Dam and Facilities, Whiskeytown Dam and Reservoir, Clear Creek Tunnel, Spring Creek Power Conduit, Powerplant and Debris Dam, Trinity Powerplant, Judge Francis Carr Powerhouse, Recreation Facilities, Permanent Operating Facilities, Operation and Maintenance Housing, Irrigation Development, and Trinity River Comprehensive Action Program.

9/ Includes totals for Radio Network, Waterfowl Conservation, Permanent Operating Facilities, and Water Rights.


N.
EXPLANATION
CONCRETE LINING FOR EXISTING CANAL
1 0 1 2 3 4 5
SCALE OF MILES
GOVERNMENT HIGHLINE CANAL & LATERALS
KEIFER EXTENSION CANAL & LATERALS
GRAND VALLEY HIGHLINE CANAL & LATERALS
INDEPENDENT RANCHMAN'S CANAL & LATERALS
GRAND VALLEY MAINLINE CANAL & LATERALS
STUBB DITCH & LATERALS
PRICE DITCH & LATERALS
ORCHARD MESA POWER CANAL & LATERALS
GRAND VALLEY CANAL & LATERALS
ORCHARD MESA CANAL NO. 1 & LATERALS
ORCHARD MESA CANAL NO. 2 & LATERALS
MESA COUNTY DITCH & LATERALS
REDLANDS POWER CANAL & LATERALS
U.S. 50
Mack
Loma
FRUITA
COLORADO
RIVER
LAND AND RIGHTS
INT. 70
Clifton
Palisade
U.S. 6
GRAND JUNCTION
GUNNISON
RIVER
U.S. 50
Craig
DENVER
COLORADO
RIVER
COLORADO
Grand Jct
Gunnison River
Salida
Pueblo
GRAND VALLEY UNIT
Dolores River
Durango
Cortez
Trinidad
KEY MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
COLORADO RIVER BASIN SALINITY
CONTROL PROJECTS
TITLE II
GRAND VALLEY UNIT
COLORADO
JANUARY 1986

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE COLORADO RIVER BASIN SALINITY CONTROL PROJECTS TITLE II - GRAND VALLEY UNIT, COLORADO	Completion Date 1995	% Complete 14 1/	Date 1/31/86

AUTHORIZATION
Public Law 93-320, June 24, 1974; Public Law 98-569, October 30, 1984

LAND CERTIFICATION
None required

DEFINITE PLAN REPORT Stage I approved March 25, 1980
Stage II scheduled for approval June 1986

BENEFIT COST RATIOS

Based on Direct Benefits	Based on Total Benefits	Date
2/	2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 5/	$243,043,000	Allotments to September 30, 1985	$ 46,016,676
Net Property and Other Transfers		Allotments for FY 1986	a/ 2,241,000
Federal Participation	325,000		
Non-Federal Participation		Allotments to Date	48,257,676
Adjustment		Allotments Required for FY 1987	12,055,000
Total to be Allocated	$243,368,000	Balance to Complete after FY 1987	$182,730,324

ALLOCATIONS 3/	
Irrigation	
Power	
M & I Water	
Recreation	
F & WL	
Flood Control	
Salinity Control	$243,368,000
Other	
Total	$243,368,000

REPAYMENT	
Amount Repaid by Irrigators	
Amount Repaid by Power	
Amount Repaid by M & I Water	
By Lower Colorado River Basin Development Fund 4/	$ 51,652,000
By Upper Colorado River Basin Fund 4/	9,115,000
Nonreimbursable 4/	182,601,000
Total	$243,368,000

AMOUNTS PER ACRE			
Irrig. Invest. per Acre		Payment Capacity per Acre	
Repayment of Investment per Acre:		Annual Charges:	
By Irrigators		O & M	
By Power Revenues		Construction	
By M & I Water Users			
		Total	

STATUS OF REPAYMENT CONTRACT: None required

STATUS OF NEPA COMPLIANCE: Projectwide - Negative determination for Grand Valley System Stage I made July 4, 1978. Stage II - draft environmental statement to Environmental Protection Agency - September 1985, final May 1986.

DESCRIPTION: This unit is located in Mesa County in western Colorado at the confluence of the Gunnison and Colorado Rivers near Grand Junction. Irrigation in the entire valley area encompasses b/ 70,500 acres, with 200 miles of canals and b/ 486 miles of laterals, most of which are earth lined. Much of the land has been irrigated for more than 50 years, and it is estimated that the Grand Valley contributes about 580,000 tons of salt annually to the Colorado River. Investigations indicated that lining canals, lining or piping laterals, rehabilitating or replacing canal and lateral structures, and constructing adequate measurement control devices could reduce the salt contribution b/ 167,160 tons per year while the Irrigation Management Scheduling and onfarm improvements should result in an additional reduction of b/ 142,600 tons per year. Stage One consisted of lining c/ 6.8 miles of main canal and placing in pipe c/ 30 miles of laterals on the Government Highline Canal. Based upon the results of Stage One, Stage Two proposes to membrane line the remainder of the Government Highline Canal and place in pipe b/ 131 miles of its associated laterals. Stage Two also proposes to place in pipe b/ 177 miles of laterals under the private systems.

PROJECT DATA SHEET - 2
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II

Grand Valley Unit, Colorado

Footnotes:

1/ The percent complete has decreased from 17 percent as presented in the FY 1986 Budget Justifications to 14 percent due to the repricing of the project plan.

2/ Previous agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications. The cost effectiveness of this unit is measured in terms of annual cost for each milligram per liter (mg/L) of salinity reduction in the Colorado River at Imperial Dam. The annual equivalent cost of the unit is $16,039,000. The annual removal of 167,160 tons of salt from the Colorado River at Grand Valley results in a salinity reduction at Imperial Dam of 16.9 mg/L. The annual cost per milligram per liter of salinity reduction is $949,000. The annual cost per ton of salt removed is $96. Current project costs are based on October 1986 projected price levels.

3/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Salinity Control	$182,497,000	$243,368,000

Explanation	Amount of Change
Change in project plan, placing lateral systems in pipe instead of open lined laterals	$+31,043,000
Reanalysis of requirements for non-contract costs based upon costs for similar type work for Government Highline Canal, Grand Valley Laterals, Grand Valley Highline Laterals, Grand Valley Mainline Laterals, Independent Ranchmen's Laterals, Keifer Extension Laterals, Price Ditch Laterals, Stubb Ditch Laterals, Orchard Mesa No. 1 Laterals, and Orchard Mesa No. 2 Laterals	+19,620,000
Refinement of project plan resulting from reanalysis of quantities, unit prices and contingencies on the Government Highline Canal, Grand Valley Laterals, Grand Valley Highline Laterals, Grand Valley Mainline Laterals, Independent Ranchmen's Laterals, Keifer Extension Laterals, Price Ditch Laterals, Stubb Ditch Laterals, Orchard Mesa No. 1 Laterals and Orchard Mesa No. 2 Laterals	+5,695,000

PROJECT DATA SHEET - 3
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II

Grand Valley Unit, Colorado

Footnotes: (Continued)

New Program Items - Government Highline Canal moss screens	$ +3,613,000
Indexing	+900,000
Total	$+60,871,000

4/ Public Law 93-320, section 205, states that 75 percent of the costs will be nonreimbursable. The other 25 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, causes of salinity, and availability of revenues, provided that costs allocated to the upper basin shall not exceed 15 percent of the costs allocated to the upper and lower basin funds. The costs to which these percentages are applied do not include $300,000 of preauthorization investigation costs which are nonreimbursable pursuant to Public Law 92-149.

5/ Appropriations authorized are $290,214,000 (October 1986) for Title II of the Colorado River Basin Salinity Control Projects under Public Law 93-320. The comparable Federal obligation is $457,020,000, which exceeds the ceiling by more than the amount of contingencies included in the obligation. Appropriate congressional committees will be advised of the appropriation ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling. The authorized appropriation ceiling decreased from that shown in the FY 1986 Budget Justification due to last year's overestimation of project prices.

a/ Based on the provisions of Public Law 99-177, funding for this project in FY 1986 will be reduced by $96,363, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

b/ Changed to reflect new project plan in Supplement to Definite Plan Report dated February 1985.

c/ As built lengths.

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II

Grand Valley Unit, Colorado

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Canals

Name	Length (miles)	Maximum capacity (cubic feet per second)
Government Highline Canal Stage 1	6.8 2/	360
East Government Highline Canal	10.0 1/	730
Middle Government Highline Canal	20.0 1/	670
West Government Highline Canal	9.0 1/	150

Laterals 3/

Name	Length 1/ (miles)	Maximum capacity (cubic feet per second)
Government Highline Laterals Stage 1	30 2/	50 2/
Government Highline Laterals	131 1/	50
Grand Valley Laterals	34 1/	12
Grand Valley Highline Laterals	22 1/	27 1/
Grand Valley Mainline Laterals	33 1/	29 1/
Independent Ranchmen's Laterals	8 1/	13
Keifer Extension Laterals	10 1/	28 1/
Price Ditch Laterals	30 1/	8
Stubb Ditch Laterals	3 1/	7 1/
Orchard Mesa No. 1 Laterals	27 1/	23 1/
Orchard Mesa No. 2 Laterals	10 1/	7

Land and Rights:

Quantity - 4,099 acres
Total Estimated Cost - $6,614,907
Cost Per Acre - $1,614
Acquisition - 1 percent complete as of September 30, 1985

1/ Changed to reflect new project plan in Supplement to Definite Plan Report dated February 1985.

2/ Reflects changes to as built quantities.

3/ The Lateral System consists of 486 miles of laterals, however, the current plan only provides for placing in pipe 338 miles of laterals, of which 30 miles were completed under Stage 1.

Appropriation Title: Construction Program
Colorado River Basin Salinity Control Projects - Title II

GRAND VALLEY UNIT, COLORADO - 5

FISCAL YEAR 1987

Work Proposed	Program
Government Highline Canal System. - Contract will be awarded for West Government Highline Canal. Preconstruction activities including design data collection, hydrosalinity, and environmental investigations will be continued.	$ 3,033,000
Grand Valley Unit Lateral System. - Work will continue on West End Lateral Lining (A49-A53). Contract will be awarded for West End Lateral Lining (A55-A57). Preconstruction activities including design data collection, preparation of designs, hydrosalinity and environmental investigations will be continued.	8,962,000
Wildlife Plan. - Pre-acquisition activities will continue for Wildlife Development Stages 1 and 2.	60,000
TOTAL	$12,055,000

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
GRAND VALLEY UNIT, COLORADO

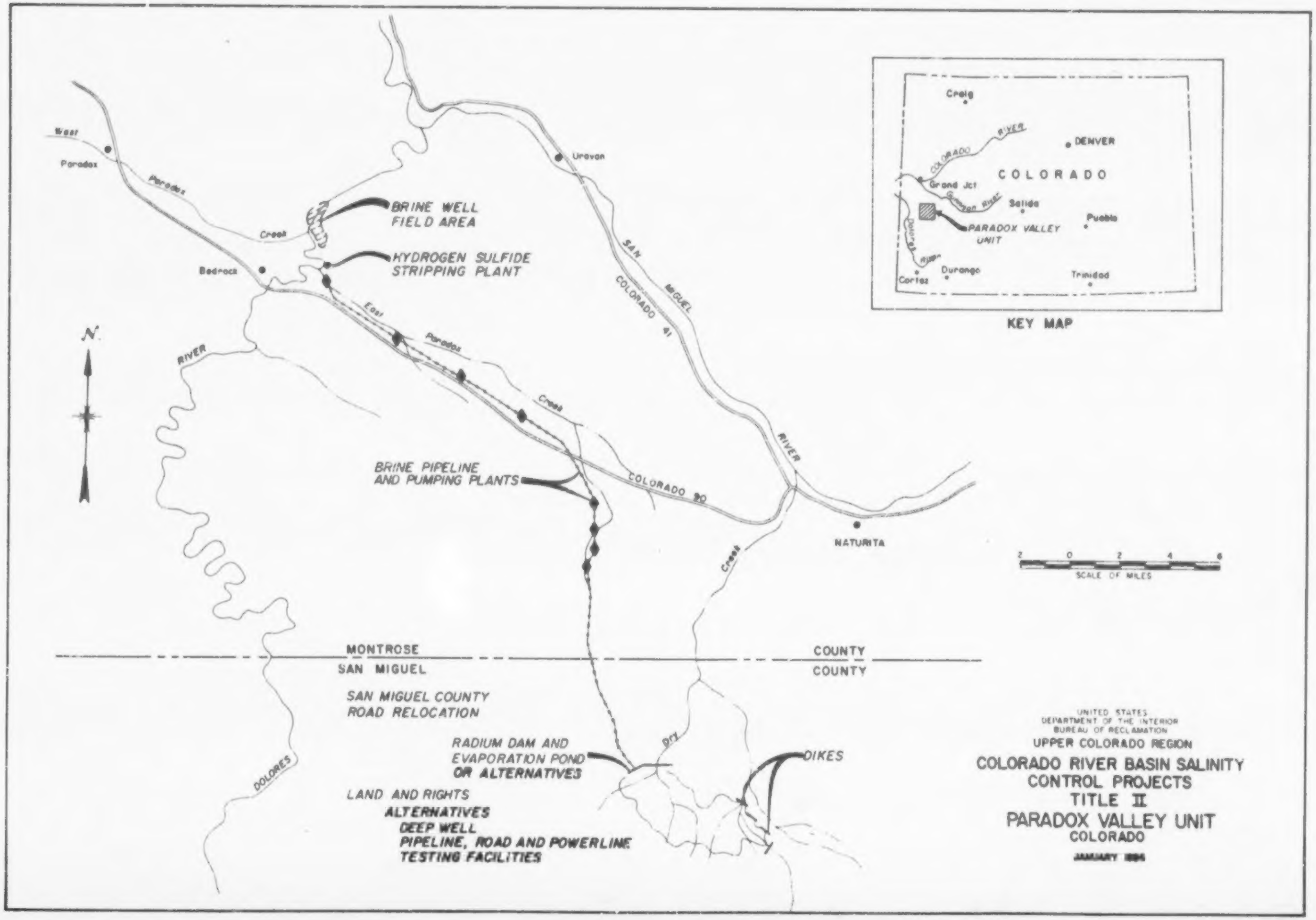
PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program 1/					
Government Highline Canal System	$115,042,000	$23,090,384	$496,000	$3,033,000	$ 88,422,616
Grand Valley Unit Lateral System	120,064,000	19,065,421	4,269,760	8,962,000	87,766,819
Wildlife Plan	7,962,000	728,551	---	60,000	7,173,449
Service Facilities, Depreciation, and Salvage	---	1,321,776	603,000	---	-1,924,776
Engineering and Design	(31,182,000)	(9,272,000)	(1,340,000)	(1,932,000)	(18,638,000)
Supervision and Administration	(49,691,985)	(14,599,110)	(2,142,284)	(2,362,920)	(30,587,671)
Total Construction Cost	$243,068,000	$44,206,132	$5,368,760	$12,055,000	$181,438,108
Other Project Costs	300,000	299,942	---	---	58
Total Project Cost	$243,368,000	$44,506,074	$5,368,760	$12,055,000	$181,438,166
Consolidated Expenditures and Credits	-325,000	-353,158	---	---	28,158
Total Expenditures	$243,043,000	$44,152,916	5,368,760	$12,055,000	$181,466,324
Undelivered Orders	---	88,250	-88,250	---	---
Total Obligations (Reclamation)	$243,043,000	$44,241,166	5,280,510	$12,055,000	$181,466,324
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$2,241,000	$12,055,000	$181,466,324
Application of prior year funds	---	---	1,775,510	---	---
Underfinancing	---	---	-1,264,000	---	1,264,000

1/ Changed to reflect new project plan as proposed in Supplement to Definite Plan Report of February 1985. All canals except Government Highline Canal were eliminated due to cost effectiveness studies, and Permanent Operating Facilities were eliminated as a requirement.

GPO 811-380


West
Paradox
Paradox
Creek
Bedrock
BRINE WELL
FIELD AREA
HYDROGEN SULFIDE
STRIPPING PLANT
East
Paradox
Creek
Uravan
SAN
MIGUEL
COLORADO 41
RIVER
N.
RIVER
BRINE PIPELINE
AND PUMPING PLANTS
COLORADO 90
NATURITA
Creek
MONTROSE
COUNTY
SAN MIGUEL
COUNTY
SAN MIGUEL COUNTY
ROAD RELOCATION
RADIUM DAM AND
EVAPORATION POND
OR ALTERNATIVES
Dry
DIKES
LAND AND RIGHTS
ALTERNATIVES
DEEP WELL
PIPELINE, ROAD AND POWERLINE
TESTING FACILITIES
DOLORES
Craig
COLORADO
RIVER
DENVER
COLORADO
Grand Jct
Gunnison River
Salida
PARADOX VALLEY
UNIT
Pueblo
Dolores
River
Durango
Cortez
Trinidad
KEY MAP
2
0
2
4
6
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
COLORADO RIVER BASIN SALINITY
CONTROL PROJECTS
TITLE II
PARADOX VALLEY UNIT
COLORADO
JANUARY 1984

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE COLORADO RIVER BASIN SALINITY CONTROL PROJECTS
TITLE II - PARADOX VALLEY UNIT, COLORADO

Completion Date	% Complete	Date
1992	4	1/31/86

AUTHORIZATION
Public Law 93-320, June 24, 1974; Public Law 98-569, dated October 30, 1984

LAND CERTIFICATION
None required

DEFINITE PLAN REPORT
Approved January 24, 1979

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
1/	1/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 4/	$84,072,000
Federal Obligations (WAPA)	1,040,000
Net Property and Other Transfers:	
Federal Participation	479,000
Non-Federal Participation	
Adjustment	
Total to be Allocated	$85,591,000

Allotments to September 30,	1985	$18,917,626
Allotments for FY	1986	a/ 1,117,000
Allotments to Date		20,034,626
Allotments Required for FY	1987	12,282,000
Balance to Complete after FY	1987	$51,755,374

ALLOCATIONS 2/	
Irrigation	
Power	
M & I Water	
Recreation	
F & WL	
Flood Control	
Salinity Control	$85,591,000
Other	
Total	$85,591,000

REPAYMENT	
Amount Repaid by Irrigators	
Amount Repaid by Power	
Amount Repaid by M & I Water	
Lower Colorado River Basin Develop. Fund 3/	$18,091,000
Upper Colorado River Basin Fund 3/	3,193,000
Nonreimbursable 3/	64,307,000
Total	$85,591,000

AMOUNTS PER ACRE			
Irrig. Invest. per Acre		Payment Capacity per Acre	
Repayment of Investment per Acre:		Annual Charges:	
By Irrigators		O & M	
By Power Revenues		Construction	
By M & I Water Users			
		Total	

STATUS OF REPAYMENT CONTRACT: None required.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Environmental Protection Agency March 20, 1979.

DESCRIPTION: This unit is located in Montrose County in southwestern Colorado near Bedrock and is situated along the axis of a collapsed salt anticline of pure salt and salt-rich shales over 14,000 feet in depth. It is estimated that Paradox Valley contributes about 200,000 tons of salt per year to the Colorado River system via the Dolores River. By constructing and utilizing a system of wells, pumps, pipelines, and solar evaporation ponds, it is estimated that this salt loading can be reduced by 180,000 tons annually.

PROJECT DATA SHEET - 2
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
Paradox Valley Unit, Colorado

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1975 and for construction in FY 1977. Deep well injection studies are underway to determine if that brine disposal method is an acceptable alternative to an evaporation pond.

Footnotes:

1/ Previous agreements with the Mexican Government concerning salinity control in the Colorado River and Public Law 93-320 authorizing Title I and Title II activities are based upon social and political justifications. The cost effectiveness of this unit is measured in terms of cost per ton. The annual equivalent cost of the unit is $6,156,000. The annual removal of salt from the Colorado River at Paradox Valley will be 180,000 tons. The annual cost per ton of salt removed is $34.20. Current project costs are based on October 1986 projected price level.

2/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 Estimate	FY 1987 Estimate
Salinity Control	$85,888,000	$85,591,000

Explanation	Amount of Change
Reanalysis of contingencies and administration costs and minor changes due to completing work	$-1,108,000
Cost Indexing (October 1985 to October 1986)	+811,000
Total	$ -297,000

3/ Public Law 93-320, section 205, states that 75 percent of the costs will be nonreimbursable. The other 25 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, causes of salinity, and availability of revenues, provided that costs allocated to the upper basin shall not exceed 15 percent of the costs allocated to the upper and lower basin funds. The costs to which the percentage division is applied do not include $456,000 of preauthorized costs which are nonreimbursable pursuant to Public Law 92-149.

PROJECT DATA SHEET - 3
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
Paradox Valley Unit, Colorado

Footnotes: (Continued)

4/ Appropriations authorized are $290,214,000 (October 1986) for Title II of the Colorado River Basin Salinity Control Project under Public Law 93-320. The comparable Federal obligation is $457,020,000, which exceeds the amount of contingencies included in the obligation. Appropriate congressional committees will be advised of the appropriation ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling. The authorized appropriation ceiling decreased from that shown in the FY 1986 Budget Justification due to last year's overestimation of project prices.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $48,031, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates on the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
PARADOX VALLEY UNIT, COLORADO
PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Radium Dam, Dike, and Evaporation Pond

Dam:
Type - Earthfill
Structural Height - 87 feet
Crest Length - 8,300 feet
Crest Width - 30 feet

Spillway:
Type - Combined with outlet works
Design Discharge - 50 cubic feet per second
Outlet Works - 810 cubic feet per second

Dike:
Type - Earthfill
Structural height - 56 feet
Crest Length - 7,500 feet
Crest Width - 30 feet

Evaporation Pond
Storage Capacity - 86,800 acre-feet

Alternate Brine Disposal Methods
Two disposal wells
Depth - 15,500 feet
Diameter - 8-3/8 inches at bottom

Brine Well Field
Twenty-four production wells with a combined pumping rate of 5 cubic feet per second

Hydrogen Sulfide Stripping Plant
Capacity - 5 cubic feet per second

Brine Pipeline
Length - 20 miles
Capacity - 5 cubic feet per second
Diameter - 15 to 18 inches

Brine Pipeline Pumping Plants
Eight plants each with total capacity of 5 cubic feet per second

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
PARADOX VALLEY UNIT, COLORADO
PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM: (continued)

Land and Rights
Quantity - 6,584 acres
Total Estimated Cost - $3,196,456 1/
Cost Per Acre - $485
Acquisition - 9 percent as of September 30, 1985

Relocation
Total Estimated Cost - $420,000
Percent Complete - 0 percent as of September 30, 1985

Item:	Length (miles)	Total Cost	Cost to September 30, 1985
San Miguel County Road	4.2	$420,000	. ---

1/ Increased cost due to land index and actual cost of purchased land.

Appropriation Title: Construction Program
Colorado River Basin Salinity Control Projects - Title II

PARADOX VALLEY UNIT, COLORADO - 6

FISCAL YEAR 1987

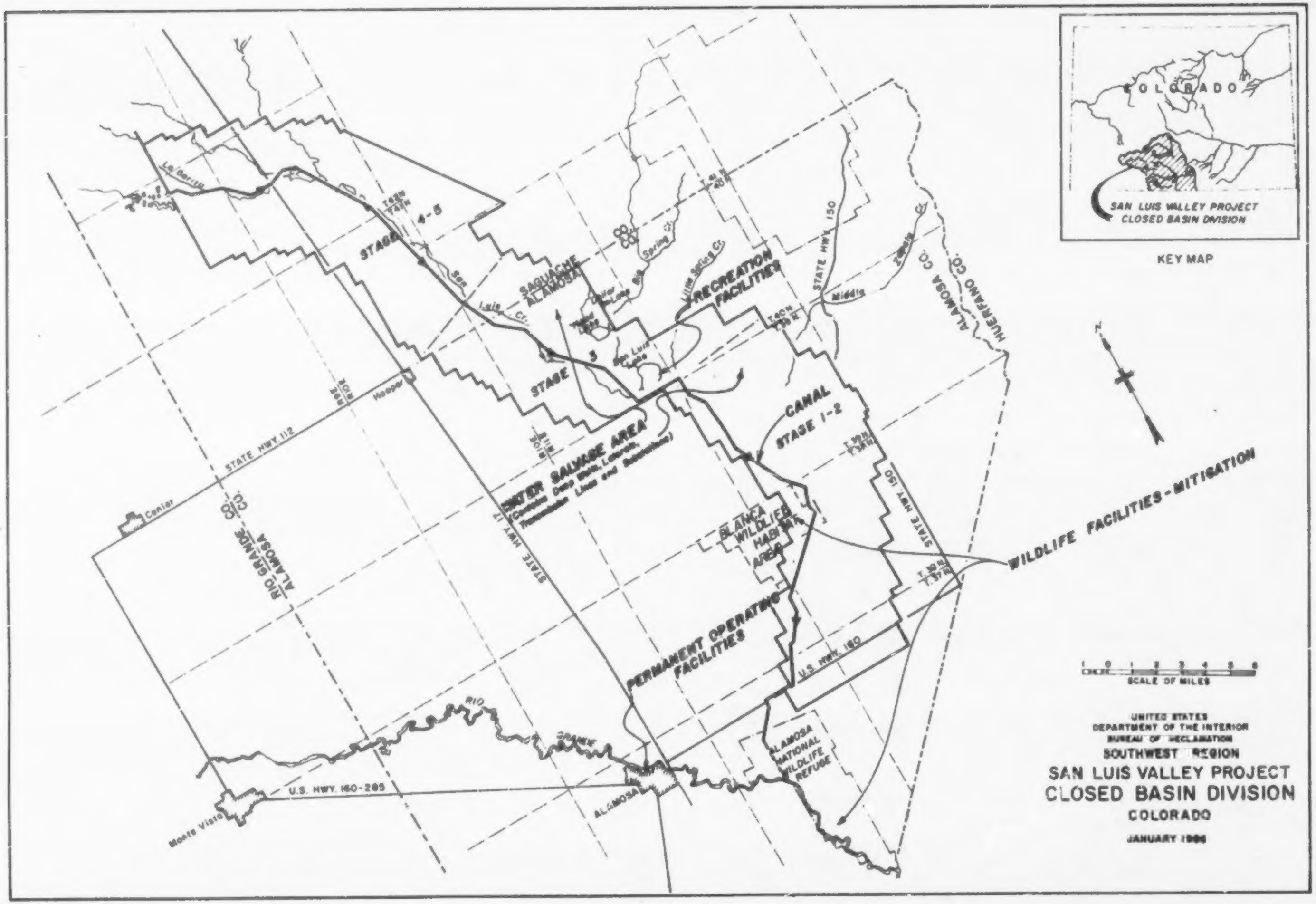
Work Proposed	Program
Brine Well Field. - Preconstruction activities will continue.	75,000
Radium Dam, Dike, and Evaporation Pond (Deep Injection Wells). - Construction of Deep Well No. 1 and installation of Tubing String and Casing will continue. Engineering and seismic monitoring activities will continue. Construction will begin for a pipeline, road, and powerline. Facilities for deep well testing will be constructed.	12,083,000
Service Facilities, Depreciation, and Salvage. - Equipment purchases will continue.	23,000
Other Project Costs. - Maintenance of constructed facilities will continue during testing.	101,000
TOTAL	$12,282,000

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
PARADOX VALLEY UNIT, COLORADO

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Brine Well Field	$ 3,566,000	$ 3,264,428	$ 47,000	$ 75,000	$ 179,572
Hydrogen Sulfide Pumping Plant	4,093,000	252,896	---	---	3,840,104
Brine Pipeline	11,185,000	522,309	---	---	10,662,691
Brine Pipeline Pumping Plants	8,362,000	437,831	---	---	7,924,169
Radium Dam, Dike, Evaporation Pond, and Alternate Brine Disposal Method (Deep Well)	52,847,000	9,579,733	5,850,000	12,083,000	25,334,267
Permanent Operating Facilities	1,105,000	40,067	---	---	1,064,933
O&M Housing	701,000	36,141	---	---	664,859
Wildlife Program (Mitigation)	1,118,000	48,117	---	---	1,069,883
Temporary Camp	725,000	---	---	---	725,000
Service Facilities, Depreciation, and Salvage	-725,000	427,291	177,685	23,000	-1,352,976
Engineering and Design	(20,024,000)	(14,056,000)	(2,000,000)	(790,000)	(3,178,000)
Supervision and Administration	(10,315,762)	(555,219)	(533,000)	(795,000)	(8,432,543)
Relocation Costs	(420,000)	(---)	(---)	(---)	(420,000)
Total Construction Cost	$82,977,000	$14,608,813	$6,074,685	$12,181,000	$50,112,502
Other Project Costs	1,574,000	467,622	141,000	101,000	864,378
Total Project Costs	$84,551,000	$15,076,435	$6,215,685	$12,282,000	$50,976,880
Consolidated Expenditures and Credits	-479,000	-592,494	---	---	113,494
Total Expenditures	$84,072,000	$14,483,941	$6,215,685	$12,282,000	$51,090,374
Undelivered Orders	---	178,685	-178,685	---	---
Total Obligations (Reclamation)	$84,072,000	$14,662,626	$6,037,000	$12,282,000	$51,090,374
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$1,117,000	$12,282,000	$51,755,374
Application of prior year funds	---	---	4,255,000	---	---
Underfinancing	---	---	665,000	---	---



COLORADO
SAN LUIS VALLEY PROJECT
CLOSED BASIN DIVISION
KEY MAP
STAGE 4-5
STAGE 3
SAGUACHE
ALAMOSA
RECREATION FACILITIES
CANAL
STAGE 1-2
WATER SALVAGE AREA
(Contains Deep Wells, Laterals, Transmission Lines and Substations)
BLANCA WILDLIFE HABITAT AREA
PERMANENT OPERATING FACILITIES
WILDLIFE FACILITIES-MITIGATION
ALAMOSA NATIONAL WILDLIFE REFUGE
RIO GRANDE CO.
ALAMOSA CO.
HUERFANO CO.
STATE HWY 112
STATE HWY 17
STATE HWY 150
U.S. HWY. 160
U.S. HWY. 160-285
San Luis Cr.
La Garita
Spring Cr.
Little Spring Cr.
Middle
Zapata
San Luis Lake
RIO GRANDE
Hooper
Center
Monte Vista
ALAMOSA
N
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHWEST REGION
SAN LUIS VALLEY PROJECT
CLOSED BASIN DIVISION
COLORADO
JANUARY 1986

REGION: Southwest

PROJECT DATA SHEET

PROJECT AND STATE: SAN LUIS VALLEY PROJECT, CLOSED BASIN DIVISION, COLORADO	:Completion Date: : 1/ 1989	% Complete : 52	: Date :1/31/86

	BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 92-514, October 20, 1972, and Public Law 96-375, October 3, 1980	:Based on Direct Benefits	:Based on Total Benefits	: Date
LAND CERTIFICATION: None Required : DEFINITE PLAN REPORT: Approved November 16, 1979	: 2/ 0.6	: 2/ 0.6	:10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 8/	$ 77,292,000	Allotments to September 30, 1985	$ 43,588,523
Total Federal Obligations(Other)		Allotments for FY 1986 a/	9,785,000
Net Property and Other Transfers:			
Federal Participation	206,000		
Non-Federal Participation		Allotments to Date	$ 53,373,523
Adjustments 3/	60,000	Allotments Required for FY 1987	12,594,000
Total to be Allocated	$ 77,558,000	Balance to Complete after FY 1987	$ 11,324,477

ALLOCATIONS 4/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	$	Amount Repaid by:		Irrig. Invest/Acre $	Payment Capacity per
Power		Irrigators	$	Repayment of Investment per Acre:	Acre-Foot:$ to $
M&I Water		Power			Annual Charges:
Recreation	3,157,000	M&I Water		By Irrigators	O&M
F&WL	3,300,000	Reimbursable Rec. 6/	593,000	By Power Revenues	Construction
Flood Control		Reimbursable Fish and Wildlife 6/	94,000		
Water Salvage	70,627,000				
State-County					
Other 5/	474,000	Nonreimbursable 7/	76,871,000		
Total	$77,558,000	Total	$ 77,558,000		

STATUS OF REPAYMENT CONTRACT: Repayment contract for reimbursable cost of recreation and fish and wildlife was executed on February 21, 1985. Validation is not required.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality on September 21, 1971. A revised draft statement was filed with the Environmental Protection Agency April 19, 1979, and the final statement was filed August 27, 1979. A draft supplement was filed with the Environmental Protection Agency February 11, 1982, and the final supplement was filed September 30, 1982.

DESCRIPTION: The project is located in south-central Colorado in Saguache and Alamosa Counties. The project is designed to facilitate the salvage and regulation of water now being nonbeneficially consumed within the closed basin and deliver

PROJECT DATA SHEET - 2
San Luis Valley Project
Closed Basin Division, Colorado

this water to the Rio Grande. This will help the United States meet its obligation to Mexico under the May 21, 1906 treaty, and provide additional water for use in Colorado, New Mexico, and Texas. The division will also provide a water supply to the Alamosa National Wildlife Refuge and establish the Russell Lakes Wildlife Management Area. The plan provides for installation of a system of wells, laterals, and main canals to salvage ground waters within the adopted salvage areas. This development will salvage an average of 100,800 acre-feet annually.

OTHER INFORMATION: Funds to initiate advance planning were appropriated in FY 1976 and for construction in FY 1979.

Footnotes:

1/ In accordance with the authorizing legislation, Public Law 92-514, Section 101(b), the project is being constructed in stages. Stage 1-2 was completed in 1985, Stage 3 will be completed in 1986, Stage 4 in 1987, and Stage 5 in 1988. Minor completion work will be accomplished in FY 1989.

2/ The ratios based on direct and total benefits are 0.6 and reflect no change from that presented in the FY 1986 Budget Justifications. The rations were computed by using the authorized interest rate of 4-7/8 percent.

3/ Reimbursable interest during construction of $52,000 for recreation and $8,000 for fish and wildlife.

4/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Recreation	$ 3,501,000	$ 3,157,000
Fish and Wildlife.	3,392,000	3,300,000
Water Salvage.	70,209,000	70,627,000
Other.	474,000	474,000
Total	$77,576,000	$77,558,000

PROJECT DATA SHEET - 3
San Luis Valley Project
Closed Basin Division, Colorado

Explanation	Amount of Change
Decrease due to reduction of reimbursable interest during construction.	$ -18,000
Total	$ -18,000

5/ Consists of nonreimbursable preauthorization investigation costs of $173,701 (Public Law 92-149) and $300,299 for nonreimbursable cultural resources activities (Public Law 93-291).

6/ The scheduled amount to be repaid is covered by existing contracts with the project beneficiaries.

7/ Includes $70,627,000 for water salvage; $2,564,000 for recreation; $3,206,000 for fish and wildlife; $173,701 for preauthorization investigation costs (Public Law 92-149); and $300,299 for cultural resources activities (Public Law 93-291).

8/ Appropriations authorized are $77,511,000 (October 1986). This authorization is adequate to cover the project as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $420,755, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

SAN LUIS VALLEY PROJECT
CLOSED BASIN DIVISION, COLORADO

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Deep Wells

Number of Wells - 183
Well Sizes - 10 to 14 inches
Well Depth - 50 to 100 feet

Canals

Length - 41.6 miles
Capacity - 160 to 20 cubic feet per second
Bottom Width - 4 to 22 feet

Laterals

Pipe System -
Length - 105.6 miles
Capacity - 10 to 0.6 cubic feet per second

Transmission Lines

Total length - 139.9 miles
Underground - 96.3 miles
Overhead - 43.6 miles
Capacity - 13.8 to 69 kilovolt

Substations

Units - 2
Capacity - 1,000 kilovolt-amperes

Land and Rights

Quantity - 6,744 acres
Total Estimated Cost - $2,429,533 1/

Cost per Acre - $360
Acquisition - 82 percent as of September 30, 1985

1/ The decrease from the FY 1986 Budget Justifications reflects costs experienced through FY 1985.

Appropriation Title: Construction Program
Construction and Rehabilitation

SAN LUIS VALLEY PROJECT
CLOSED BASIN DIVISION, COLORADO - 5

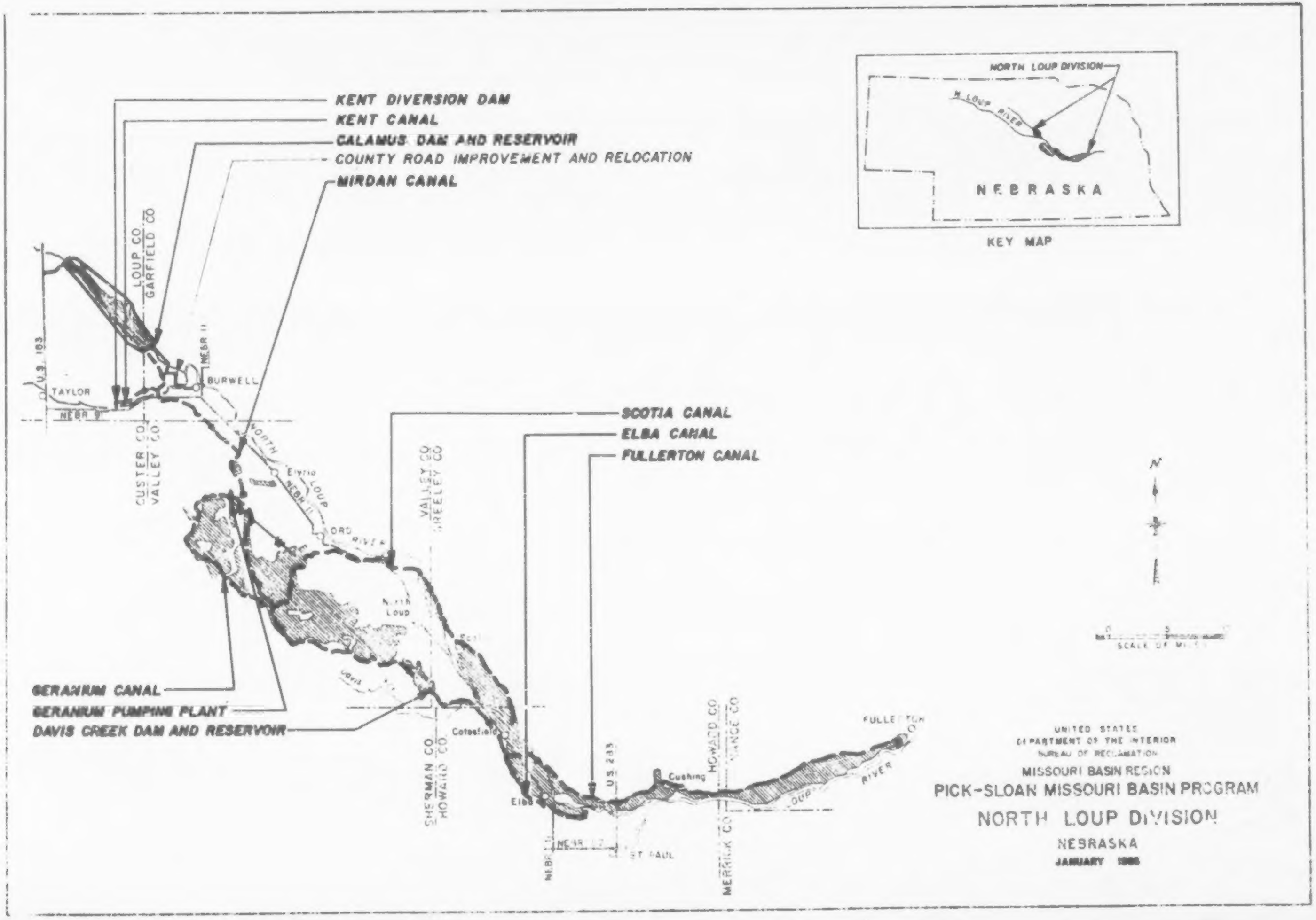
FISCAL YEAR 1987

Work Proposed	Program
Deep Wells -Acquisition of land and rights and contracts for furnishing and installing pumps and prime movers for salvage wells will continue. Work will also continue on the automatic control system.	$ 2,397,000
Canals - Acquisition of land and rights, contracts for seeding and establishing a tree shelter belt and constructing canals will continue.	2,500,000
Laterals - Land acquisition for remaining lateral areas will be completed. Construction on laterals will be continued.	3,637,000
Transmission System - Construction of the electrical transmission system will continue.	1,540,000
Permanent Operating Facilities - Acquisition of operation and maintenance equipment will continue.	10,000
Wildlife Facilities - Mitigation - Land acquisition will continue. Contracts will be awarded for the Wildlife Refuge and Wildlife Management Area facilities.	650,000
Recreation Facilities - Construction of the public use and water supply facilities, will be completed. Contracts will be awarded for construction of the San Luis Lake pumping plant, and the completion of the recreation facilities.	1,851,000
Other Project Costs - Cultural resource activities will continue.	9,000
TOTAL	$12,594,000

SAN LUIS VALLEY PROJECT, CLOSED BASIN DIVISION, COLORADO

PF-40(10-78) SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPT. 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
CONSTRUCTION PROGRAM					
Deep Wells	$18,377,000	$9,914,898	$3,412,000	$2,397,000	$2,653,102
Canals	26,106,000	20,171,243	3,028,000	2,500,000	406,757
Laterals	18,538,000	7,122,288	3,227,000	3,637,000	4,551,712
Transmission System	6,795,000	825,790	1,012,000	1,540,000	3,417,210
Permanent Operating Facilities	1,006,000	813,193	17,000	10,000	165,807
Wildlife Facilities-Mitigation	3,761,000	2,451,035	182,000	650,000	477,965
Recreation Facilities	2,441,000	46,380	135,000	1,851,000	408,620
Service Depreciation and Salvage	---	832,898	73,000	---	(905,898)
Engineering and Design	[10,469,000]	[8,064,000]	[1,284,000]	[1,030,000]	[91,000]
Supervision and Administration	[11,133,220]	[7,037,741]	[1,389,776]	[1,290,000]	[1,415,703]
TOTAL CONSTRUCTION COST	$77,024,000	$42,177,725	$11,086,000	$12,585,000	$11,175,275
Other Project Costs	474,000	444,967	15,000	9,000	5,033
TOTAL PROJECT COST	$77,498,000	$42,622,692	$11,101,000	$12,594,000	$11,180,308
Consolidated Expenditures and Credits	(206,000)	(350,211)	42	---	144,169
TOTAL EXPENDITURES	$77,292,000	$42,272,481	$11,101,042	$12,594,000	$11,324,477
Undelivered Orders	---	822,042	(822,042)	---	---
TOTAL OBLIGATIONS (RECLAMATION)	$77,292,000	$43,094,523	$10,279,000	$12,594,000	$11,324,477
METHOD OF FINANCING					
Appropriation Available and Required	---	---	$9,785,000	$12,594,000	$11,324,477
Application of Prior Year Funds	---	---	494,000	---	---


KENT DIVERSION DAM
KENT CANAL
CALAMUS DAM AND RESERVOIR
COUNTY ROAD IMPROVEMENT AND RELOCATION
MIRDAN CANAL
LOUP CO.
GARFIELD CO.
U.S. 183
NEBR 11
TAYLOR
BURWELL
NEBR 91
CUSTER CO.
VALLEY CO.
NORTH LOUP RIVER
Elyria
NEBR 11
ORD
VALLEY CO.
GREELEY CO.
North Loup
Scotia
Davis
SCOTIA CANAL
ELBA CANAL
FULLERTON CANAL
GERANIUM CANAL
GERANIUM PUMPING PLANT
DAVIS CREEK DAM AND RESERVOIR
SHERMAN CO.
HOWARD CO.
Cotesfield
Elba
NEBR 11
NEBR 22
ST. PAUL
U.S. 281
Cushing
HOWARD CO.
NANCE CO.
MERRICK CO.
LOUP RIVER
FULLERTON
NORTH LOUP DIVISION
N. LOUP RIVER
NEBRASKA
KEY MAP
N
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
PICK-SLOAN MISSOURI BASIN PROGRAM
NORTH LOUP DIVISION
NEBRASKA
JANUARY

REGION:
MISSOURI BASIN

PROJECT DATA SHEET

PROJECT AND STATE: PICK-SLOAN MISSOURI BASIN PROGRAM	Completion Date	% Complete	Date
NORTH LOUP DIVISION, NEBRASKA	1/ 1993	51	1/31/86

AUTHORIZATION:
Public Law 92-514, October 20, 1972

LAND CERTIFICATION:
April 20, 1976

DEFINITE PLAN REPORT:
Approved May 24, 1978

BENEFIT COST RATIOS		
Based on Direct: Benefits	Based on Total: Benefits	Date
2/ 1.4	2/ 1.6	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 12/	$350,910,000	Allotments to September 30, 1985	$155,589,147
Total Federal Obligations(Other)	---	Allotments for FY 1986 a/	24,249,000
Net Property and Other Transfers:			
Federal Participation	1,870,000		
Non-Federal Participation	2.260,000	Allotments to Date	$179,838,147
Adjustment 3/	2,711,000	Allotments Required for FY 1987	14,035,000
Total to be Allocated	$357,751,000	Balance to Complete after FY 1987	$157,036,853

ALLOCATIONS 4/	
Irrigation	$293,741,000
Power	---
M&I Water	---
Recreation	9,476,000
F&WL	52,086,000
Flood Control	---
Navigation	
State-County	
Other 5/	2,448,000
Total	$357,751,000

REPAYMENT	
Amount Repaid by:	
Irrigators 6/	$ 27,284,000
Power 7/	266,457,000
M&I Water	---
Reimbursable Recreation 8/	610,000
Reimbursable Fish & Wildlife 8/	1,650.000
Nonreimbursable 9/	61,750,000
	$357,751,000

AMOUNTS PER ACRE			
Irrig. Invest/Acre	$5,542	Payment Capacity per Acre-Foot: 10/	$19.90
Repayment of Investment per Acre:		Annual Charges:	
By Irrigators	515	O&M	15.15
By Power Revenues	5,027	Construction	9.90
			$25.05

STATUS OF REPAYMENT CONTRACT: Repayment contract with the Twin Loups Irrigation District executed June 4, 1976, validated August 2, 1977. Water service contract with the Twin Loups Reclamation District executed June 4, 1976, validated August 17, 1979 11/. Cost-sharing agreement covering the reimbursable recreation costs executed June 17, 1983, and the reimbursable Fish and Wildlife cost executed May 31, 1985, with Nebraska Game and Parks Commission.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with council on environmental quality, September 18, 1972. Supplement to the final filed with the Environmental Protection Agency, April 12, 1979.

DESCRIPTION: The project is located in central Nebraska along the North Loup and Loup Rivers and will serve the function of irrigation, recreation, and fish and wildlife. Diversion facilities are located in Loup and Garfield Counties and the irrigable lands are located in Valley, Greeley, Howard, Merrick, and Nance counties. The major features are Calamus Dam

PROJECT DATA SHEET - 2
Pick-Sloan Missouri Basin Program
North Loup Division, Nebraska

and Reservoir, Kent Diversion Works, and Davis Creek Dam and Reservoir. Distribution facilities will provide water to 53,000 acres of irrigable land. Corn, alfalfa, hay, and wheat are the principal crops that are presently grown. A higher proportion of corn is expected with application of project water.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1974 and for construction in FY 1976. Construction began in June 1976 with execution of road improvement contracts.

Footnotes:

1/ Initial water for irrigation service is scheduled for May 1987. A one year delay in initial water delivery from the FY 1986 Budget Justification was caused by delays in construction due to weather and contract modifications.

2/ No change from 1.4 direct benefits and 1.6 total benefits as presented in the FY 1986 Budget Justifications. Both benefits and costs have been updated and projected to October 1986 levels. The irrigation benefits have been reevaluated to reflect current agricultural prices. The benefits increased and the costs remained essentially unchanged, however, benefits did not increase enough to change the benefit-cost ratio. The authorized interest rate of 3-1/4 percent was used to compute the benefit-cost ratio.

3/ Interest-free power investment of $2,711,000 for pumping power.

4/ Explanation of changes in allocations from the FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$296,160,000	$293,741,000
Recreation	9,268,000	9,476,000
Fish and Wildlife	51,345,000	52,086,000
Other	2,438,000	2,448,000
Total	$359,211,000	$357,751,000

Explanation	Amount of change
Cost Indexing (Oct. 1985 to Oct. 1986)	$ +800,000
Changes based on bids	-3,050,000
Changes in estimates	+790,000
Total	$ -1,460,000

PROJECT DATA SHEET - 3
Pick-Sloan Missouri Basin Program
North Loup Division, Nebraska

Footnotes: - (continued)

5/ Represents nonreimbursable preauthorization investigation costs of $1,668,000 (Public Law 92-149) and $780,000 for cultural resources activities (Public Law 93-291).

6/ The scheduled amount to be repaid is covered by existing contracts with the project beneficiaries.

7/ The scheduled amount is identified for repayment from net power revenues generated by established power rates.

8/ The scheduled amount to be repaid is covered by cost sharing agreements with the Nebraska Game and Parks Commission in accordance with Public Law 89-72.

9/ Includes nonreimbursable fish and wildlife $50,436,000; recreation $8,866,000; $1,668,000 preauthorization investigation costs; and $780,000 for cultural resources activities.

10/ Payment capacity was determined in 1974 prior to execution of the repayment contracts. Indications are that adequate payment capacity exists to cover the construction obligation and the increased operation and maintenance costs.

11/ Water service contract is renewable and covers a period greater than 40 years.

12/ Appropriations authorized are $205,520,000 (October 1986). The comparable Federal obligation is $350,910,000 which exceeds the ceiling by more than the amount of contingencies included in the obligation. Appropriate congressional committees were advised of the ceiling status for this project. Legislation to provide additional appropriation ceiling has been introduced in Congress (H.R. 2503, May 14, 1985 and S. 1704, September 25, 1985). Current commitments will be held within the existing ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $ 1,042,707, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

PICK-SLOAN MISSOURI BASIN PROGRAM
NORTH LOUP DIVISION, NEBRASKA

PHYSICAL DATA ON STRUCTURES* - 4

COMPLETED WORK:

Access Road to Calamus Damsite

Type - Asphalt concrete

Length - 6.5 miles

CONSTRUCTION PROGRAM:

Calamus Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 96 feet
Crest Length - 7,250 feet
Base Width - 1,255 feet, maximum

Spillway:
Type - Morning glory
Design Discharge - 3,080 cubic feet per second

Reservoir Capacity:
Total Storage - 127,300 acre-feet

Davis Creek Dam and Reservoir

Dam:
Type - Zoned Earthfill
Structural Height - 157 feet
Crest Length - 3,000 feet
Base Width - 690 feet, maximum

Spillway:
Increase in canal outlet capacity of 240 cubic feet per second in conjunction with an emergency overbank spillway.

Reservoir Capacity:
Total Storage - 32,760 acre-feet

Kent Diversion Works

Dam:
Type - Concrete and rolled earth
Structural Height - 9 feet
Crest Length - 1,000 feet
Diversion Capacity - 350 cubic feet per second

Spillway:
Type - Concrete ogee
Design Discharge - 3,610 cubic feet per second

Reservoir Capacity:
Total Storage - None

---

* Physical data in this budget submittal have been changed to reflect current data as contained in the "Cost Reevaluation Report" dated December 1984.

PICK-SLOAN MISSOURI BASIN PROGRAM
NORTH LOUP DIVISION, NEBRASKA

PHYSICAL DATA ON STRUCTURES* - 5

Geranium Pumping Plant

Nine units - Total capacity 210 cubic feet per second at 122 feet head

Canals	Length (miles) Open Canal	Length (miles) Open Pipe	Capacity (cubic feet per second)	Service area (acres)
Kent Canal	4	-	350	Feeder canal
Mirdan Canal	46	-	870 to 250	11,730
Geranium Canal	15	2	200 to 12	10,940
Scotia Canal	31	4	190 to 2	10,240
Fullerton Canal	46	5	400 to 2	16,210
Elba Canal	4	5	80 to 2	3,880

Lateral Distribution System

Length - 140 miles (12 miles of open laterals and 128 miles of buried pipe)
Capacity - 70 to 15 cubic feet per second (Open Laterals) and 37 to 1 cubic feet per second (Buried Pipe)

Land and Rights

Quantity - 20,448 acres
Total Estimated Cost - $14,219,197
Cost Per Acre - $695
Acquisition - 60 percent of the land and rights have been acquired as of September 30, 1985.

Total Estimated Cost - $7,600,000
Percent Complete - 78 percent as of September 30, 1985. 1/

Items	Length	Total cost	Cost to September 30, 1985
County Roads	27 miles	$7,270,000	$5,640,000
Utility Lines	32 miles	330,000	280,000
	Total	$7,600,000	$5,920,000

PICK-SLOAN MISSOURI BASIN PROGRAM
NORTH LOUP DIVISION, NEBRASKA

PHYSICAL DATA ON STRUCTURES* - 6

* Physical data in this budget justification have been changed to reflect current data as contained in the "Cost Re-evaluation Report" dated December 1984.

1/ The percent complete is less than shown in the FY 1986 Budget Justification because the total estimated cost increased more than the obligations for FY 1985.

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
NORTH LOUP DIVISION, NEBRASKA

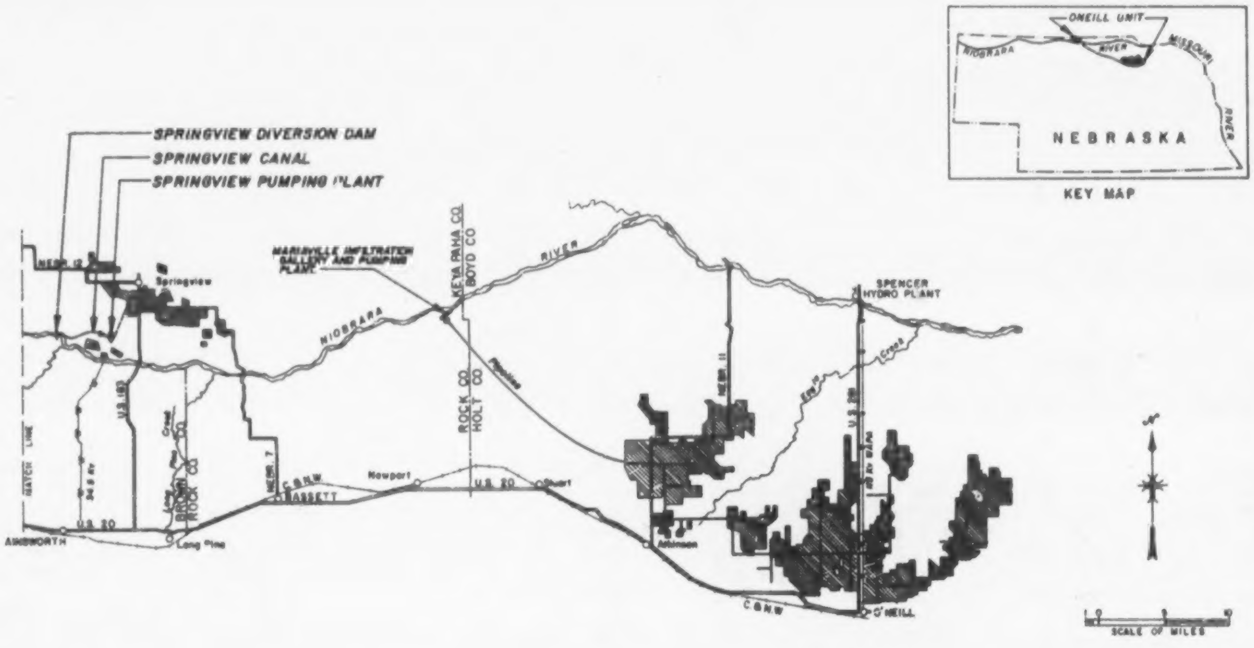
FISCAL YEAR 1987

Work Proposed	Program
Calamus Dam and Reservoir. - Fish and Wildlife mitigation measures will continue, and initial filling cycles will be monitored.	$ 250,000
Fish and Wildlife Enhancement. - Fish stocking and design of the fish hatchery will be started under the Public Law 89-72 cost sharing agreement.	220,000
Davis Creek Dam and Reservoir. - Land acquisition and construction will continue.	1,122,000
Diversion Works, Pumping Plant, Canals, Laterals, and Surface Drains. - Construction will continue on the canal and lateral Systems. Land acquisition will continue for the Fullerton - 1st Section and Elba System. Preconstruction activities will continue on the remaining facilities.	12,038,000
Permanent Operating Facilities. - The purchase of operating equipment will continue.	120,000
Service Facilities, Depreciation, and Salvage. - For the purchase of work and laboratory equipment.	20,000
Other Project Costs. - Cultural resource activities will continue and maintenance of completed facilities will continue.	320,000
Non-Federal Participation. - State of Nebraska matching funds for non-Federal share of Fish and Wildlife Enhancement under Public Law 89-72 agreement.	-55,000
TOTAL	$14,035,000

PICK-SLOAN MISSOURI BASIN PROGRAM, NORTH LOUP DIVISION - NEBRASKA

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Calamus Dam and Reservoir	$83,340,000	$79,102,126	$1,630,000	$250,000	$2,357,874
Recreational Development	1,220,000	101,456	1,038,000	-	80,544
Fish and Wildlife Enhancement	6,600,000	-	-	220,000	6,380,000
Davis Creek Dam and Reservoir	40,160,000	3,786,625	950,000	1,122,000	34,301,375
Diversion Works, Pumping Plant, Canals, Laterals, and Surface Drains	199,870,000	68,858,191	21,945,935	12,038,000	97,027,874
Subsurface Drains	16,220,000	77,534	-	-	16,142,466
Permanent Operating Facilities	3,315,000	595,464	1,266,865	120,000	1,332,671
O&M Housing	65,000	-	65,000	-	0
Service Facilities, Depreciation, and Salvage	0	712,401	20,000	20,000	(752,401)
Engineering and Design	36,260,000	26,400,000	2,450,000	2,340,000	5,070,000
Supervision and Administration	58,361,900	22,948,666	3,661,000	3,495,000	28,256,434
Relocation Costs	7,600,000	5,920,000	-	-	1,680,000
Total Construction Cost	$350,790,000	$153,233,797	$26,915,800	$13,770,000	$156,870,403
Other Project Costs	4,250,000	2,021,327	110,000	320,000	1,798,673
Total Project Cost	$355,040,000	$155,255,124	$27,025,800	$14,090,000	$158,669,076
Non-Federal Cash Contribution	(2,260,000)	(53,189)	(516,539)	(55,000)	(1,635,272)
Consolidated Expenditures and Credits	(1,870,000)	(1,871,185)	(1,864)	-	3,049
Total Expenditures	$350,910,000	$153,330,750	$26,507,397	$14,035,000	$157,036,853
Undelivered Orders		1,755,667	(1,755,667)		--
Total Obligations (Reclamation)	$350,910,000	$155,086,417	$24,751,730	$14,035,000	$157,036,853
Method of Financing:					
Appropriation available and required	$ --	$ --	$24,249,000	$14,035,000	$157,036,853
Application of prior year funds	--	--	502,730	--	--


SPRINGVIEW DIVERSION DAM
SPRINGVIEW CANAL
SPRINGVIEW PUMPING PLANT
MARIAVILLE INFILTRATION GALLERY AND PUMPING PLANT
KEYA PAHA CO
BOYD CO
ROCK CO
HOLT CO
NIOBRARA
RIVER
SPENCER HYDRO PLANT
Springview
NEBR. 12
NEBR. 7
NEBR. 11
U.S. 183
U.S. 20
U.S. 281
C.&N.W.
BROWN CO
ROCK CO
Long Pine Creek
Eagle Creek
Pipeline
BASSETT
Newport
Stuart
Atkinson
O'NEILL
AINSWORTH
Long Pine
SCALE OF MILES
0
5
10
O'NEILL UNIT
NIOBRARA
RIVER
MISSOURI
RIVER
NEBRASKA
KEY MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MISSOURI BASIN REGION

PICK-SLOAN MISSOURI BASIN PROGRAM

O'NEILL UNIT

NEBRASKA

JANUARY 1966

REGION:
MISSOURI BASIN

PROJECT DATA SHEET

PROJECT AND STATE: PICK-SLOAN MISSOURI BASIN PROGRAM O'NEILL UNIT, NEBRASKA	Completion Date: 1/	% Complete 1/	Date 1/31/86
	BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 92-514, October 20, 1972	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION: March 29, 1976 — DEFINITE PLAN REPORT: Approved March 24, 1977	1/	1/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation)	$ 173,424,018	Allotments to September 30, 1985	$ 7,246,635
Total Federal Obligations(Other)		Allotments for FY 1986 a/	240,000
Net Property and Other Transfers:			
Federal Participation	1,146,982		
Non-Federal Participation		Allotments to Date	$ 7,486,635
Adjustment		Allotments Required for FY 1987	1,381,000
Total to be Allocated	$ 174,571,000	Balance to Complete after FY 1987	$ 164,556,383

ALLOCATIONS		*REPAYMENT*		*AMOUNTS PER ACRE*			
Irrigation	$	Amount Repaid by:		Irrig. Invest/Acre	$	Payment Capacity per Acre-Foot:$ to $	
Power		Irrigators	$	Repayment of Investment per Acre:			
M&I Water		Power				Annual Charges:	
Recreation		M&I Water		By Irrigators		O&M	
F&WL		State-County		By Power Revenues		Construction	
Flood Control		Local Interests					
Navigation		Deferred Use					
State-County							
Other		Nonreimbursable					
Total	$ 1/		$ 1/				1/

STATUS OF REPAYMENT CONTRACT: Repayment contract with the Niobrara Basin Irrigation District and water service contract with the North Central Nebraska Reclamation District executed May 18, 1976, and validated April 9, 1980. 1/

STATUS OF NEPA COMPLIANCE: Projectwide environmental statement was filed with Council on Environmental Quality September 22, 1972. First supplement filed with Environmental Protection Agency on June 16, 1978. Second supplement filed with the Environmental Protection Agency July 24, 1981.

DESCRIPTION: The project is located in north-central Nebraska within the Niobrara River Basin and will serve the function of irrigation. Diversion facilities are located in Keya Paha and Rock Counties with irrigable lands in Holt and Keya Paha Counties. A diversion dam, pumping plant and conventional distribution system will serve 8,000 acres of irrigable land in Keya Paha County. An infiltration gallery, pumping plant, supply pipeline, distribution system pipelines, injection wells, and "Ranney" wells will serve 84,860 acres of irrigable land in Holt County. Recovery of water injected into the aquifer will supply 62,000 acres, while 22,680 will be supplied by direct-service pipelines. Corn, alfalfa, hay and wheat are the principal crops that are presently grown. A higher proportion of corn is expected with application of project water.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1974 and for initiation of construction in FY 1976. Construction started May 24, 1976, with execution of a road improvement contract. Save the Niobrara River Association, Inc., filed a complaint June 26, 1975, in U.S. District Court requesting an injunction prohibiting the United States from any further activity on the project until the final environmental statement has been amended to conform to the National Environmental Policy Act. Judicial action on the complaint found the final environmental statement deficient in four areas and an injunction was issued by U.S. District Court on March 4, 1977. A supplement to the final environmental statement was filed June 16, 1978. On April 16, 1979, that court found that two of the original deficiencies were not adequately addressed in the supplement and continued the injunction. The Bureau of Reclamation filed the second supplement on July 24, 1981. On August 13, 1981, the United States filed a motion for dismissal of the complaint and lifting of the court injunction. On April 1, 1982, the plaintiffs filed a motion to amend and supplement their complaint, alleging eight new causes of action. On April 30, 1982, the U.S. Attorney filed a response memorandum with the court on the motion and four of the proposed new issues were dismissed. On July 30, 1982, the U.S. Attorney filed a motion opposing the four remaining issues and three more of the proposed issues were dismissed. In June 1983, the court set the trial date to litigate the two remaining issues for February 2,,1984. On December 13, 1983, the court granted Federal defendant's motion for delay, and rescheduled the trial for December 3, 1984. The November 20, 1984 court order granted plaintiffs' motion for delay and rescheduled trial for June 3, 1985. All parties have filed stipulations to withdraw from this action. On May 9, 1985, the court vacated its November 20, 1984 order, thereby delaying trial indefinitely, and dismissing without prejudice all motions concerning the O'Neill Unit.

The fiscal year 1983 Supplemental Appropriations Bill directed the Bureau to contract with the State of Nebraska to conduct the State-led study of a well field/ground-water recharge proposal or alternative to the Norden Dam and further directed a use of available funds not to exceed $100,000 and 18 months duration. The report "Nebraska State-led O'Neill Unit Alternative Study" was completed January 31, 1985.

The entire Nebraska congressional delegation requested a review and analysis of the authorized O'Neill Unit plan to focus upon the development of appropriate detailed information to reduce project costs. This analysis was conducted concurrently with the State-led study and was completed in January, 1985.

PROJECT DATA SHEET - 3
Pick-Sloan Missouri Basin Program
O'Neill Unit, Nebraska

The report "Nebraska State-led O'Neill Unit Alternative Study" dated January 31, 1985 proposed a groundwater recharge/recovery concept to serve the majority of the area plus direct service to serve those areas not susceptible to ground-water recharge. The entire Nebraska Congressional delegation plus the Governor and the State of Nebraska expressed unified support for this groundwater recharge/recovery concept. Legislation has been introduced into both Houses of Congress to modify the existing O'Neill Unit authorization to provide for the proposals presented in the Nebraska State-led Study. (H.R. 1950, March 19, 1985). All work on the "authorized" project has been stopped. Work has been completed on a Plan of Study (November 1985) to verify the groundwater recharge/recovery concept proposed by the State of Nebraska.

1/ Revision or adjustments will be necessary for the groundwater-recharge/recovery concept proposed in the "Nebraska" State-led O'Neill Unit Alternative Study" dated January 31, 1985, and included in this budget justification. An economic analysis of the groundwater recharge/recovery proposal has not been conducted. A new authorized appropriation ceiling will be established in the amended legislation.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $10,320, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
O'NEILL UNIT, NEBRASKA

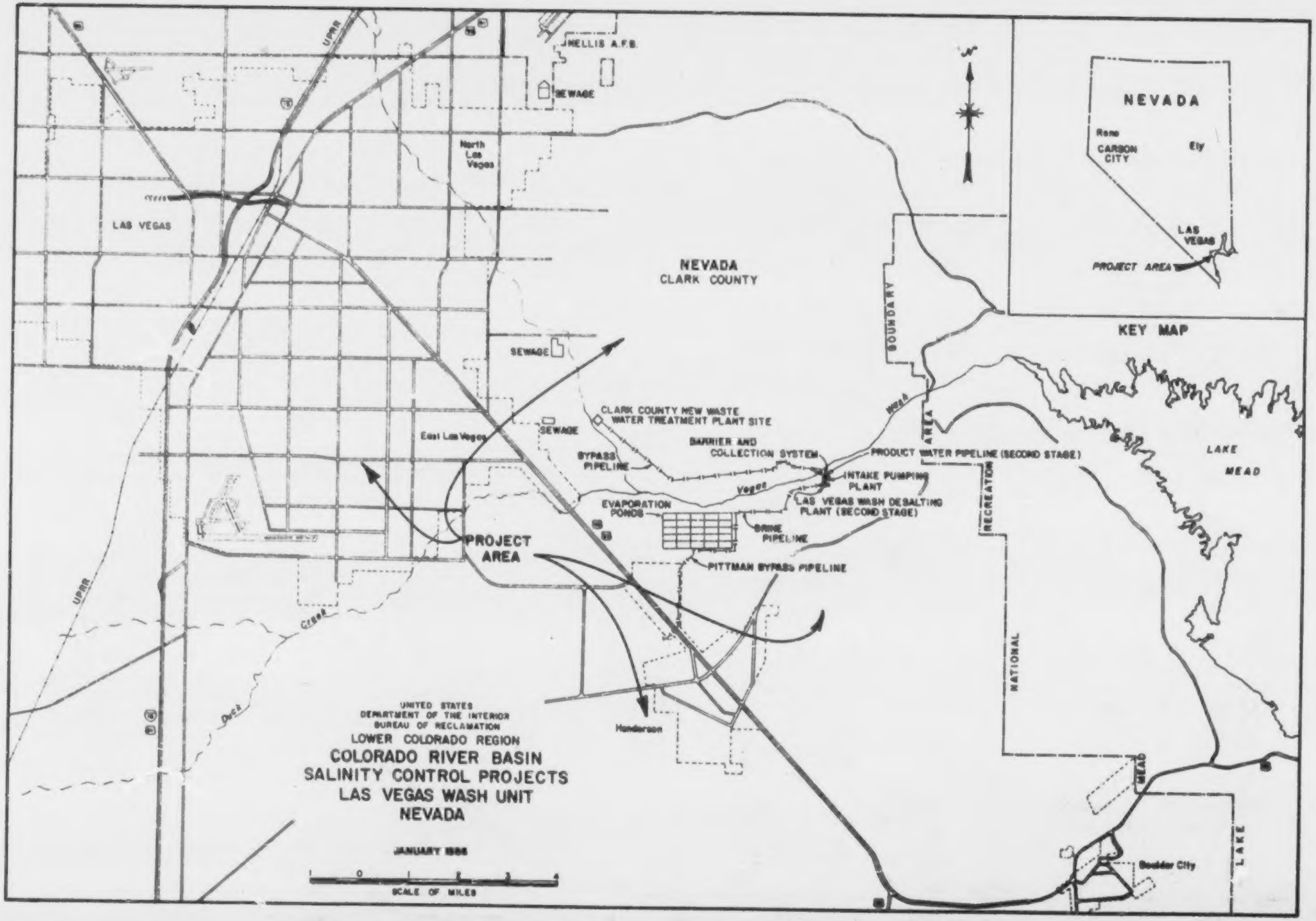
FISCAL YEAR 1987

Work Proposed	Program
To continue the groundwater recharge verification study and to initiate design and preconstruction work on Stage I construction of the groundwater recharge test section.	$1,381,000
TOTAL	1,381,000

PICK-SLOAN MISSOURI BASIN PROGRAM, O'NEILL UNIT - NEBRASKA

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Ground Water Recharge Project					
Irrigation Service	$166,500,000	-	$555,050	$1,381,000	$164,563,950
Norden Dam and Reservoir	3,199,379	3,199,379			0
Recreational Development	79,364	79,364			0
Fish and Wildlife Facilities	36,595	36,395			200
O'Neill Canal	1,669,152	1,669,152			0
Sprinview Area/Pump/Canal/Laterals	351,972	351,972			0
O'Neill/Atkinson Area	1,014,153	1,014,153			0
O'Neill Subsurface Drains	51,966	51,966			0
Permanent Operating Facilities	30,594	30,594			0
O&M Housing	1,376	1,376			0
Service Facilities, Depreciation and Salvage	157,604	157,604			0
Engineering and Design					
Supervision and Administration					
Relocation Costs					0
Total Construction Cost	$173,092,155	$6,591,955	$555,050	$1,381,000	$164,564,150
Other Project Costs	1,478,863	1,478,863	—	—	—
Total Project Cost	$174,571,018	$8,070,818	$555,050	$1,381,000	$164,564,150
Other Consolidated Expenditures and Credits	(1,147,000)	(1,139,233)	—	—	(7,767)
Total Expenditures	$173,424,018	$6,931,585	$555,050	$1,381,000	$164,556,383
Undelivered Orders		32,050	(32,050)		
Total Obligations (Reclamation)	$173,424,018	$6,963,535	$523,000	$1,381,000	$164,556,383
Method of Financing:					
Appropriation Available and Required	$ —	$ —	$ 240,000	$1,381,000	$164,556,383
Application of Prior Year Funds	—	—	283,000	—	—



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
COLORADO RIVER BASIN
SALINITY CONTROL PROJECTS
LAS VEGAS WASH UNIT
NEVADA

JANUARY 1986

UPRR
NELLIS A.F.B.
SEWAGE
North Las Vegas
LAS VEGAS
NEVADA
CLARK COUNTY
SEWAGE
CLARK COUNTY NEW WASTE WATER TREATMENT PLANT SITE
SEWAGE
East Las Vegas
BYPASS PIPELINE
BARRIER AND COLLECTION SYSTEM
PRODUCT WATER PIPELINE (SECOND STAGE)
INTAKE PUMPING PLANT
LAS VEGAS WASH DESALTING PLANT (SECOND STAGE)
EVAPORATION PONDS
BRINE PIPELINE
PITTMAN BYPASS PIPELINE
Vegas
Wash
PROJECT AREA
Duck Creek
Henderson
BOUNDARY
AREA
RECREATION
NATIONAL
LAKE MEAD
MEAD
LAKE
Boulder City
KEY MAP
NEVADA
Reno
CARSON CITY
Ely
LAS VEGAS
PROJECT AREA
1 0 1 2 3 4
SCALE OF MILES

REGION:
Lower Colorado

PROJECT DATA SHEET

PROJECT AND STATE: COLORADO RIVER BASIN SALINITY CONTROL PROJECTS, TITLE II - LAS VEGAS WASH UNIT, NEVADA	Completion Date: 1/	$ Complete 0 2/	Date 1/31/86

	BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 93-320, June 24, 1974	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION: None required : DEFINITE PLAN REPORT: Scheduled November 1988 3/	4/	4/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 8/	$ 129,799,000	Allotments to September 30, 1985	$ 7,965,288
Total Federal Obligations (Other)		Allotments for FY 1986	---
Net Property and Other Transfers:			
Federal Participation	-176,000		
Non-Federal Participation		Allotments to Date	7,965,288
Adjustment		Allotments Required for FY 1987	75,000
Total to be Allocated	$ 129,623,000	Balance to Complete after FY 1987	$ 121,758,712

ALLOCATIONS 5/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	$	Amount Repaid by:		Irrig. Invest/Acre $	Payment Capacity per Acre-Foot: $ to $
Power		Irrigators	$	Repayment of Investment per Acre:	Annual Charges:
M&I Water		Power		By Irrigators	O&M
Recreation		M&I Water		By Power Revenues	Construction
F&WL		Lower Colorado River Basin Dev. Fund 6/	27,546,000		
Flood Control		Upper Colorado River Basin Dev. Fund 6/	4,860,000		
Salinity Control	129,623,000	Nonreimbursable 6/	97,217,000		
Other					
Total	$ 129,623,000		$ 129,623,000		

STATUS OF REPAYMENT CONTRACT: None required.

STATUS OF NEPA COMPLIANCE: Final environmental statement was filed with the Council on Environmental Quality May 19, 1977. 7/

DESCRIPTION: The unit is located in southern Nevada, Clark County, near Henderson. The initial two-stage plan proposed collection of brackish ground water from Las Vegas Wash by using a subsurface barrier to divert ground-water flow to a pumping plant for disposal in evaporation ponds. Surface wastewater of low salinity entering the wash would be diverted and conveyed beyond the ground-water collection site. If the ground water were to exceed the collection capacity in succeeding years, a desalting plant would be provided by the second-stage construction. The evaporation ponds would continue to receive brine from the desalting plant. An alternative ground-water prevention strategy proposes only the separation of surface wastewater and minor storm runoff from brackish or saline ground water in the Wash. Construction of additional features would be deferred until justified.

PROJECT DATA SHEET - 2
COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
LAS VEGAS WASH UNIT, NEVADA

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in fiscal year 1975, and appropriations were provided in fiscal year 1977 to initiate construction.

The Las Vegas Wash Unit was authorized to control the flow of high salinity ground water entering Lake Mead from Las Vegas Wash. A primary source of the salinity was identified under industrial tailings ponds in the Henderson, Nevada area. Measures have now been instituted by these industries to control further buildup of the salt mound by containment of the industrial process wastewater in lined ponds. A ground-water monitoring program has indicated subsequent changes in the Las Vegas Wash ground water that have reduced the cost effectiveness of the initial plan. To identify the most cost effective measures necessary to fulfill the purposes of Public Law 93-320, the authorizing act, the sources of Las Vegas Wash salt loading were studied further. This study has shown that the major portion of salt loading comes from extensive natural salt deposits in and around Las Vegas Wash. An alternative strategy has been proposed to prevent the formation of brackish ground water by controlling seepage from surface wastewater of low salinity.

Footnotes:

1/ Advance planning was completed in March 1977. Construction was initiated in fiscal year 1977 and was deferred in fiscal year 1978. Completion of the project has been deferred due to need for additional study.

2/ The project is presently being restudied and will probably be reformulated.

3/ Definite Plan Report delayed from May 1984 to November 1988 due to development of new alternatives.

4/ Assessment of the full beneficial impact of improving water quality as a result of this authorized project has not been made. Public Law 93-320 authorizing Title I and Title II was based upon social and political justifications. There are no quantified net benefits but unquantified benefits are believed to be in excess of project costs.

Footnotes: (continued)

5/ Explanation of change in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Salinity control	$122,326,000	$129,623,000

Explanation	Amount of Change
Cost Indexing (Construction Program)	$+5,397,000
Change in scope of work and completion schedule for the verification program (Other Project Cost)	+1,900,000
TOTAL	$+7,297,000

6/ Public Law 93-320, Section 205, states that 75 percent of the costs will be nonreimbursable. The other 25 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, causes of salinity, and availability of revenues provided that costs allocated to the Upper Basin Fund shall not exceed 15 percent of the costs allocated to the Upper and Lower Basin Funds.

7/ The project has been reevaluated. A Definite Plan Report and Final Supplemental Environmental Statement are scheduled for November 1988. A Finding of No Significant Impact for Monitoring Facilities was approved August 24, 1979. A Finding of No Significant Impact for the Pittman Verification Program was approved May 13, 1983.

8/ Appropriations authorized are $290,214,000 (October 1986) for Title II of the Colorado River Basin Salinity Control Projects under Public Law 93-320. The comparable Federal obligation is $457,020,000, which exceeds the ceiling by more than the amount of contingencies included in the obligation. The major increase, approximately $60 million, was caused by the reformulation of the Grand Valley Unit. Appropriate congressional committees will be advised of the appropriation ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling. The authorized appropriation ceiling decreased from that shown in the fiscal year 1986 Budget Justifications due to projected indices being greater than actual indices.

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II
LAS VEGAS WASH UNIT, NEVADA

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM: 1/

First Stage

Las Vegas Wash Collection System

Barrier: Crest Length - 1,700 feet   Height - 25 feet
Intake Pumping Plant: Three units total capacity 10.5 cubic feet per second at 105 head
Booster Pumping Plant: Three units total capabity 10.5 cubic feet per second at 199 feet head
Regulating Tank: Diameter - 50 feet   Height - 30 feet

Evaporation Ponds:

Ponds: 25 ponds with total area of 625 acres   8 - 22 feet deep

Bypass Pipeline

Pipeline: Length - 5 miles   Diameter - 60 inches   Capacity - 240 cubic feet per second

Second Stage

Las Vegas Wash Desalting Complex

Membrane Desalting Plant: 14 million gallons per day
Intake Pumping Plant Additions: Two pumps with total capacity 10.5 cubic feet per second at 105 feet head

Land and Rights 2/

Quantity - 875 acres
Total Estimated Cost - $4,601,000
Cost per Acre - $5,258
Acquisition - 0 percent complete as of September 30, 1985

1/ Based on the initial plan.
2/ Increase is due to cost indexing, plus an increase due to the change in scope of work on the Verification Program.

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II DIVISION
ARIZONA-CALIFORNIA - 5

FISCAL YEAR 1987

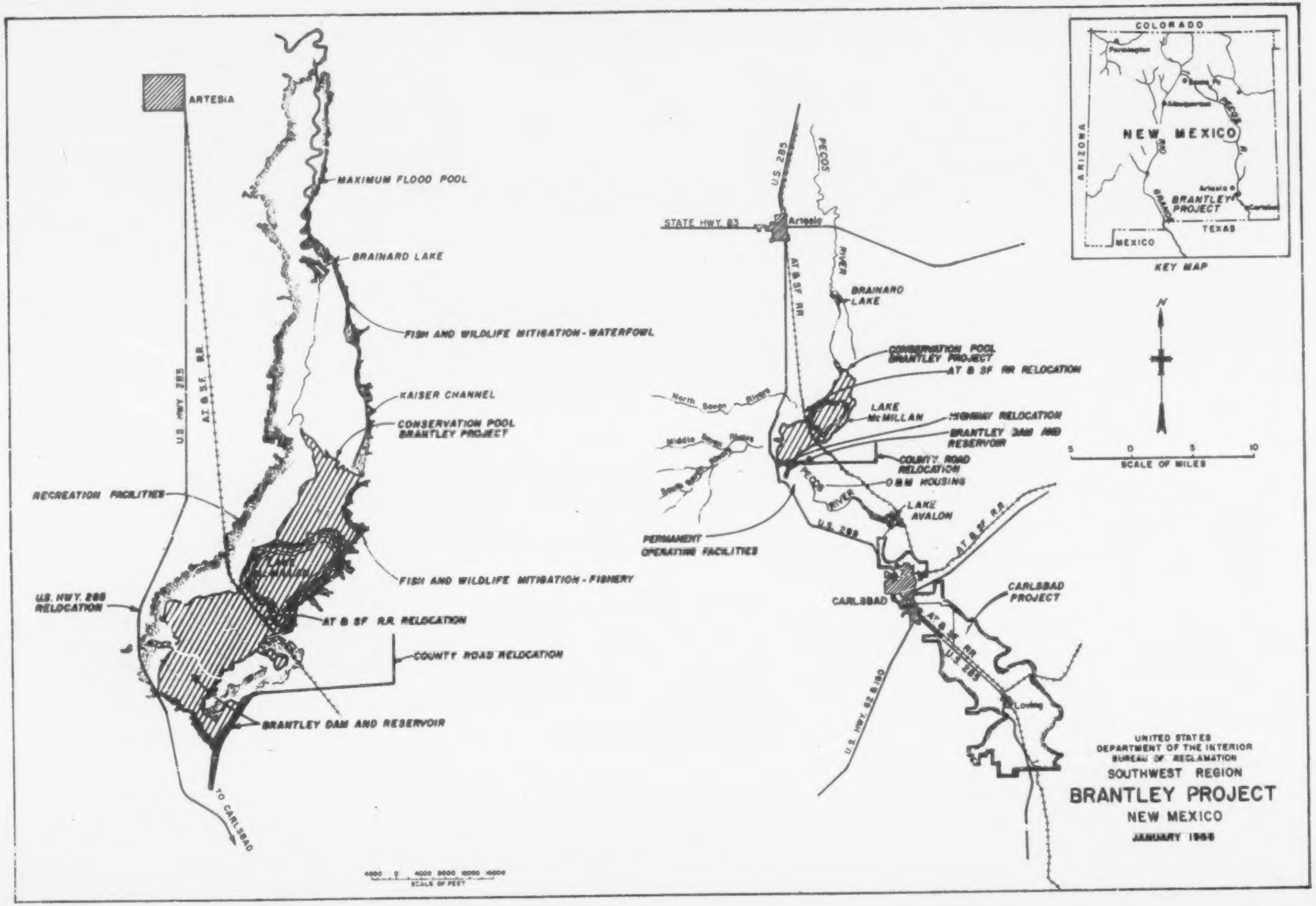
Work Proposed		Program
Other Project Costs. - Monitoring of Las Vegas Wash flow and the resultant density current in Las Vegas Bay will continue.		$75,000
	TOTAL	$75,000

COLORADO RIVER BASIN SALINITY CONTROL PROJECTS - TITLE II, LAS VEGAS WASH UNIT - NEVADA

PF-40

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Las Vegas Wash Collection System	$14,116,000	$798,056	$0	$0	$13,317,944
Evapopration Ponds	40,648,000	544,298	0	0	40,103,702
Bypass Pipepline	10,413,000	183,138	0	0	10,229,862
Las Vegas Wash Desalting Complex	54,306,000	160,047	0	0	54,145,953
Service Facilities, Depreciation, & Salvage.	0	14,151	0	0	(14,151)
Engineering and Design	(9,994,680)	(1,646,872)	(975,000)	(38,000)	(7,334,808)
Supervision and Administration	(7,880,105)	(2,413,646)	(245,000)	(37,000)	(5,184,459)
Total Construction Costs.	$119,483,000	$1,699,690	$0	$0	$117,783,310
Other Project Costs.	10,140,000	4,802,752	1,501,388	75,000	3,760,860
Total Project Costs	$129,623,000	$6,502,442	$1,501,388	$75,000	$121,544,170
Consolidated Expenditures and Credits. . . .	176,000	36,338	120	0	139,542
Total Expenditures.	$129,799,000	$6,538,780	$1,501,508	$75,000	$121,683,712
Undelivered Orders	0	22,508	(22,508)	0	0
Total Obligations (Reclamation)	$129,799,000	$6,561,288	$1,479,000	$75,000	$121,683,712
Method of Financing:					
Appropriation available and required	$0	$0	$0	75,000	121,683,712
Application of prior year funds	0	0	1,404,000	0	0
Underfinancing	0	0	75,000	0	0


ARTESIA
MAXIMUM FLOOD POOL
BRAINARD LAKE
FISH AND WILDLIFE MITIGATION - WATERFOWL
KAISER CHANNEL
CONSERVATION POOL BRANTLEY PROJECT
U.S. HWY 285
AT & SF. R.R.
RECREATION FACILITIES
FISH AND WILDLIFE MITIGATION - FISHERY
U.S. HWY. 285 RELOCATION
AT & SF R.R. RELOCATION
COUNTY ROAD RELOCATION
BRANTLEY DAM AND RESERVOIR
TO CARLSBAD
4000 0 4000 8000 12000 16000
SCALE OF FEET
U.S. 285
PECOS
STATE HWY. 83
Artesia
RIVER
AT & SF RR
BRAINARD LAKE
CONSERVATION POOL BRANTLEY PROJECT
AT & SF RR RELOCATION
North Seven Rivers
Middle Seven Rivers
South Seven Rivers
LAKE McMILLAN
HIGHWAY RELOCATION
BRANTLEY DAM AND RESERVOIR
COUNTY ROAD RELOCATION
O & M HOUSING
PECOS RIVER
LAKE AVALON
PERMANENT OPERATING FACILITIES
U.S. 285
AT & SF RR
CARLSBAD
CARLSBAD PROJECT
AT & SF RR
U.S. 285
U.S. HWY. 62 & 180
Loving
COLORADO
Farmington
Santa Fe
Albuquerque
ARIZONA
NEW MEXICO
RIO GRANDE
PECOS R.
Artesia
BRANTLEY PROJECT
Carlsbad
TEXAS
MEXICO
KEY MAP
N
5 0 5 10
SCALE OF MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHWEST REGION
BRANTLEY PROJECT
NEW MEXICO
JANUARY 1968

REGION: Southwest

PROJECT DATA SHEET

PROJECT AND STATE: BRANTLEY PROJECT, NEW MEXICO	Completion Date: 1989 1/	% Complete 33	Date 1/31/86

	BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 92-514, October 20, 1972 and Public Law 96-375, October 3,1980	Based on Direct: Benefits	Based on Total: Benefits	Date
LAND CERTIFICATION: November 27, 1981 3/ — DEFINITE PLAN REPORT: Approved May 1, 1975. New Report Approved January 6, 1983 4/	2/ 1.3	2/ 1.3	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 10/	$128,640,000	Allotments to September 30, 1985	$51,376,762
Total Federal Obligations(Other)		Allotments for FY 1986 a/	27,000,000
Net Property and Other Transfers:			
Federal Participation	316,000		
Non-Federal Participation		Allotments to Date	$78,376,762
Adjustments 5/	161,000	Allotments Required for FY 1987	23,650,000
Total to be Allocated	$129,117,000	Balance to Complete after FY 1987	$26,613,238

ALLOCATIONS 6/	
Irrigation	$ 51,000
Power	
M&I Water	
Recreation	4,005,000
F&WL	30,000
Flood Control	861,000
Safety of Dams	121,353,000
Hwy Improvement	1,716,000
Other 7/	1,101,000
Total	$129,117,000

REPAYMENT	
Amount Repaid by:	
Irrigators 8/	$ 51,000
Power	
M&I Water	
Recreation 8/	1,950,000
Local Interests	
Deferred Use	
Nonreimbursable 9/	127,116,000
	$129,117,000

AMOUNTS PER ACRE			
Irrig. Invest/Acre	$2.04	Payment Capacity per Acre	$2.75
Repayment of Investment per Acre:		Annual Charges:	
By Irrigators	2.04	O&M	$0.34
By Power Revenues		Construction	1.32
		Total	$1.66

STATUS OF REPAYMENT CONTRACT: The repayment contract with the Carlsbad Irrigation District was executed on October 31, 1975, and validated February 11, 1976. The repayment contract with New Mexico State Park and Recreation Commission covering the reimbursable recreation cost was executed March 9, 1977. Validation is not required.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality on September 11, 1972. A draft supplement was filed with the Environmental Protection Agency February 10, 1981, and the final supplement was filed October 26, 1982.

DESCRIPTION: The project is located on the Pecos River in Eddy County, New Mexico, about 5 miles downstream from existing McMillan Dam. The site is approximately midway between Artesia and Carlsbad, New Mexico. The plan consists of the construction of the Brantley Dam and Reservoir, the primary purpose being safety of dams with additional benefits for irrigation, flood control, fish and wildlife, and recreation. In addition, Brantley Reseroir will provide storage for flood control not presently available and will eliminate the threat of failure because of inadequate spillways at McMillan and Avalon Dams and will provide replacement storage which improves the water supply for the 25,055-acre Carlsbad Irrigation District. Principal crops presently grown in the Carlsbad Irrigation District are cotton, forage, and small grains.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1974 and for construction in FY 1975. Before construction was started it was decided that the alinement of the dam must be moved downstream to utilize a more favorable foundation. However, the cost estimate based on the new alinement exceeded the authorized ceiling and construction was deferred pending legislation to increase the appropriation ceiling. This legislation was enacted by Public Law 96-375 on October 3, 1980.

Footnotes:

1/ Because of low bids, available funds, and reduced contingencies, the necessary work has been accommodated in one year's less time.

2/ The ratios based on direct and total benefits are 1.3 and compare with 1.2 as presented in the FY 1986 Budget Justifications. The significant reduction in the total estimated project cost resulted in an increase in the ratios. The ratios were computed by using the re-authorized interest rate of 6-7/8 percent.

3/ This project will provide replacement storage for land in Carlsbad Irrigation District that has been irrigated for more than 50 years. No new lands will be irrigated.

4/ A status report was released to the congressional delegation on April 9, 1980. A new Definite Plan Report was approved January 6, 1983.

5/ Reimbursable interest during construction on recreation.

6/ Explanation of changes in allocations from FY 1986 Budget Justifications:

PROJECT DATA SHEET - 3
Brantley Project, New Mexico

Footnotes: (Continued)

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 53,000	$ 51,000
Recreation	4,022,000	4,005,000
Fish and Wildlife	31,000	30,000
Flood Control	891,000	861,000
Safety of Dams	155,730,000	121,353,000
Highway Improvement	1,716,000	1,716,000
Other	960,000	1,101,000
Total	$163,403,000	$129,117,000

Explanation	Amount of Change
Adjustment to bid prices	$-12,903,709
Re-evaluation of land and rights	-10,880,271
Re-evaluation of contingencies	- 8,132,043
Re-evaluation of noncontract cost requirements	- 2,362,977
Interest During Construction	- 7,000
Total	$- 34,286,000

7/ Includes $316,000 for nonreimbursable preauthorization investigation costs (Public Law 92-149), $643,000 for nonreimbursable cultural resources activities (Public Law 93-291), and $142,000 for maintenance work during construction.

8/ The scheduled amount to be repaid is covered by existing contracts with the project beneficiaries.

9/ Includes recreation, $2,055,000; fish and wildlife, $30,000; flood control, $861,000; safety of dams, $121,353,000; $316,000 for nonreimbursable preauthorization investigation costs (Public Law 92-149); $643,000 for nonreimbursable cultural resources activities (Public Law 93-291); $142,000 for maintenance work during construction; and $1,716,000 for relocation of highways to higher standards (Public Law 93-251).

10/ Appropriations authorized are $230,444,000 (October 1986). This authorization is adequate to cover the project as currently proposed. The authorized appropriation ceiling decreased from that shown in the FY 1986 Budget Justifications due to last years overestimation of projected 1984 and 1985 rate of inflation.

PROJECT DATA SHEET - 4
Brantley Project, New Mexico

Footnotes: (Continued)

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $ 1,161,000, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

BRANTLEY PROJECT, NEW MEXICO

PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM:

Brantley Dam and Reservoir

Dam:

Type-Combination concrete gravity & zoned earthfill
Structural Height - 130.5 feet
Crest Length - 21,600 feet
Base Width - 784.5 feet.

Spillway:

Type-Radial gated concrete overflow
Capacity-128,600 cubic feet per second

Reservoir Capacity:

Total Storage-520,000 acre-feet

Land and Rights

Quantity - 11,510 acres 1/
Total Estimated Cost - $16,704,729 1/

Cost per Acre - $1,451
Acquisition - 91 percent as of September 30 1985

Relocations:

Total Estimated Cost - $24,144,000 2/
Percent Complete - 20 percent as of September 30, 1985

Items:	Length (mile)	Total Cost	September 30, 1985
Atchison, Topeka, and Santa Fe Railroad	3.9	$17,316,000	$ 351,000
U.S. Highway No 285	5.1	4,343,000	4,343,000
County Roads	6.9	1,238,000	--
Telephone lines	7.5	80,000	--
Powerlines	6.3	495,000	--
Oil and gas facilities		498,000	--
Cemetery		139,000	--
Miscellaneous relocations		35,000	35,000
TOTAL		$24,144,000	$4,729,000

BRANTLEY PROJECT - NEW MEXICO
PHYSICAL DATA ON STRUCTURES - 6

1/ The reduction from the FY 1986 Budget Justifications quantity and in the total estimated costs were based on land and rights acquired thus far, and reduced land requirements for Fish and Wildlife Mitigation.

2/ Reflects a decrease of $1,147,000 from that shown in the FY 1986 Budget Justifications, and includes $871,000 for contingencies and $276,000 for reduced noncontract cost requirements.

Appropriation Title: Construction Program
Construction and Rehabilitation

BRANTLEY PROJECT, NEW MEXICO

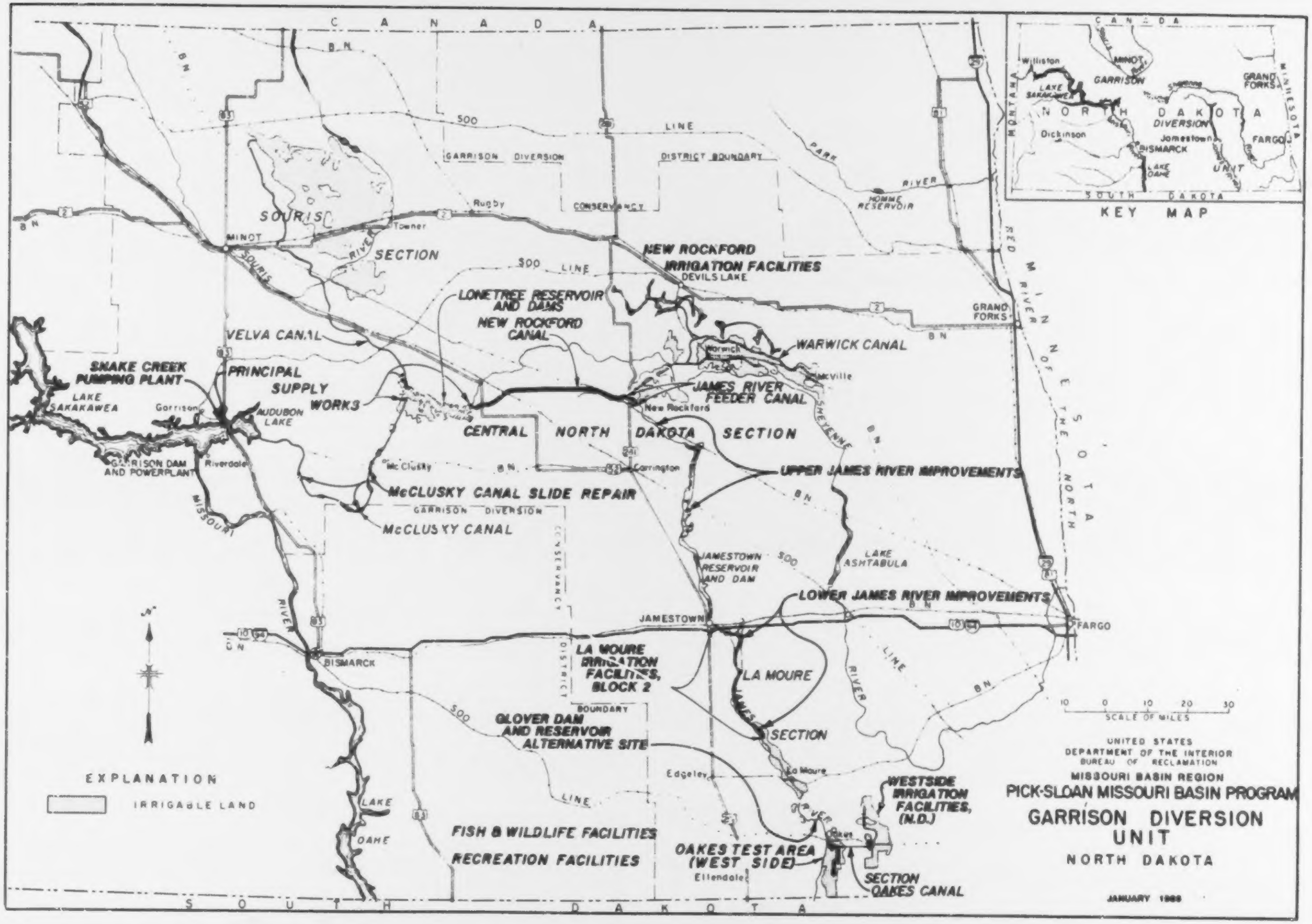
FISCAL YEAR 1987

Work Proposed	Program
Brantley Dam and Reservoir - Acquisition of land and rights and relocation of the railroad, cemetery, and oil/gas facilities will be completed. Work will continue on constructing Brantley Dam. Contracts will be awarded for relocating county roads and utilities, and clearing and fencing Brantley Reservoir.	$22,896,000
Permanent Operating Facilities - Data collection for O&M equipment will continue.	2,000
Recreation Facilities - A contract will be awarded for constructing the recreation facilities.	224,000
Fish and Wildlife Mitigation Facilities - Work on the pumping plant and access road will be completed.	504,000
Other Project Costs - Remaining archeology mitigation will be completed.	24,000
TOTAL	$23,650,000

BRANTLEY PROJECT, NEW MEXICO

PF-40(10-78) SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPT. 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
CONSTRUCTION PROGRAM					
Brantley Dam and Reservoir	$119,663,000	$46,519,201	$29,513,356	$22,896,000	20,734,443
Permanent Operating Facilities	707,750	382,543	2,000	2,000	321,207
O&M Housing	15,000	---	---	---	15,000
Recreation Facilities	3,580,000	---	102,000	224,000	3,254,000
Fish and Wildlife Mitigation	3,891,050	1,652,594	1,379,000	504,000	355,456
Service Depreciation and Salvage	---	831,240	---	---	(831,240)
Engineering and Design	[16,494,000]	[13,349,000]	[2,071,000]	[1,067,000]	[1,807,000]
Supervision and Administration	[14,493,086]	[8,106,000]	[2,409,356]	[1,784,000]	[2,193,730]
Relocations Costs	[24,144,000]	[4,729,000]	[8,400,000]	[7,965,000]	[3,050,000]
TOTAL CONSTRUCTION COST	$127,856,800	$49,385,578	$30,996,356	$23,626,000	$23,848,866
Other Project Costs	1,099,200	944,200	131,000	24,000	---
TOTAL PROJECT COST	$128,956,000	$50,329,778	$31,127,356	$23,650,000	$23,848,866
Consolidated Expenditures and Credits	(316,000)	(544,372)	---	---	228,372
TOTAL EXPENDITURES	$128,640,000	$49,785,406	$31,127,356	$23,650,000	$24,077,238
Undelivered Orders	---	1,156,356	(1,156,356)	---	---
TOTAL OBLIGATIONS (RECLAMATION)	$128,640,000	$50,941,762	$29,971,000	$23,650,000	$24,077,238
METHOD OF FINANCING					
Appropriation available and required	---	---	$27,000,000	$23,650,000	$24,077,238
Application of prior year funds	---	---	435,000	---	---
Underfinancing	---	---	2,536,000	---	---


CANADA
SOUTH DAKOTA
MINNESOTA
BN
500 LINE
GARRISON DIVERSION
CONSERVANCY
DISTRICT BOUNDARY
PARK RIVER
HOMME RESERVOIR
RED RIVER OF THE NORTH
Rugby
Towner
MINOT
SOURIS SECTION
SOURIS RIVER
NEW ROCKFORD IRRIGATION FACILITIES
DEVILS LAKE
GRAND FORKS
LONETREE RESERVOIR AND DAMS
NEW ROCKFORD CANAL
VELVA CANAL
WARWICK CANAL
Warwick
McVille
SNAKE CREEK PUMPING PLANT
PRINCIPAL SUPPLY WORKS
LAKE SAKAKAWEA
Garrison
AUDUBON LAKE
JAMES RIVER FEEDER CANAL
New Rockford
SHEYENNE
CENTRAL NORTH DAKOTA SECTION
GARRISON DAM AND POWERPLANT
Riverdale
McClusky
Carrington
UPPER JAMES RIVER IMPROVEMENTS
McCLUSKY CANAL SLIDE REPAIR
McCLUSKY CANAL
MISSOURI RIVER
JAMESTOWN RESERVOIR AND DAM
LAKE ASHTABULA
LOWER JAMES RIVER IMPROVEMENTS
JAMESTOWN
FARGO
BISMARCK
LA MOURE IRRIGATION FACILITIES, BLOCK 2
LA MOURE SECTION
JAMES
GLOVER DAM AND RESERVOIR ALTERNATIVE SITE
Edgeley
La Moure
WESTSIDE IRRIGATION FACILITIES, (N.D.)
LAKE OAHE
FISH & WILDLIFE FACILITIES
RECREATION FACILITIES
OAKES TEST AREA (WEST SIDE)
Oakes
Ellendale
OAKES CANAL SECTION
EXPLANATION
IRRIGABLE LAND
10 0 10 20 30
SCALE OF MILES
KEY MAP
Williston
MINOT
GARRISON
LAKE SAKAKAWEA
MONTANA
NORTH DAKOTA
DIVERSION
Dickinson
Jamestown
BISMARCK
LAKE OAHE
UNIT
GRAND FORKS
FARGO
SOUTH DAKOTA
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT
NORTH DAKOTA
JANUARY 1988

REGION
Missouri Basin

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE PICK-SLOAN MISSOURI BASIN PROGRAM GARRISON DIVERSION UNIT, NORTH DAKOTA	Completion Date 1/	% Complete 2/	Date 1/31/86

AUTHORIZATION
Public Law 89-108, August 5, 1965; Public Law 98-360, July 16, 1984, and S.1785 (Pending)

LAND CERTIFICATION	DEFINITE PLAN REPORT	BENEFIT COST RATIOS Based on Direct Benefits	Based on Total Benefits	Date
3/	4/	5/	5/	10/01/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)		Allotments to September 30, 1985	$243,394,910
Net Property and Other Transfers:		Allotments for FY 1986 a/	23,851,000
Federal Participation			
Non-Federal Participation		Allotments to Date	$267,245,910
Adjustment		Allotments Required for FY 1987	18,000,000
Total to be Allocated	6/	Balance to Complete after FY 1987	6/

ALLOCATIONS		REPAYMENT		AMOUNTS PER ACRE	
Irrigation		Amount Repaid by Irrigators		Irrig. Invest. per Acre 9/	Payment Capacity per Acre 9/
Power		Amount Repaid by Power		Repayment of Investment per Acre:	Annual Charges:
M & I Water		Amount Repaid by M & I Water		By Irrigators	O & M
Recreation				By Power Revenues	Construction
F & WL		Non-Federal Contributions		By M & I Water Users	
Flood Control				By Contributions	
Other		Nonreimbursable			
Total	7/	Total	8/		Total 9/

STATUS OF REPAYMENT CONTRACT: Execution of the master contract with Garrison Diversion Conservancy District and three-way contracts between Bureau of Reclamation, Conservancy District, and Irrigation Districts, containing approximately 113,000 acres of irrigable land, was completed March 16, 1966. Court validation was completed July 26, 1966, and confirmed August 10, 1966. Any required renegotiation to conform to Commission Plan and/or reformulation legislation will occur prior to construction activity.

STATUS OF NEPA COMPLIANCE: 10/ Final Supplemental Environmental Statement on features for initial development of 85,000 acres was filed with Environmental Protection Agency on July 15, 1983. A draft environmental statement addressing the Garrison Commission recommendations is scheduled to be filed with the Environmental Protection Agency in February 1986, with the Final Environmental Impact Statement scheduled for filing in November 1986.

DESCRIPTION -AUTHORIZED 250,000 ACRE PLAN: The currently authorized unit is located in central and eastern North Dakota and northeastern South Dakota. Counties in which facilities are located include North Dakota - Benson, Bottineau, Burleigh, Dickey, Eddy, Foster, LaMoure, McHenry, McLean, Nelson, Ramsey, Renville, Richland, Sargent, Sheridan, Stutsman, Ward, and Wells; and in South Dakota - Brown and Marshall. This is a multipurpose unit which would provide a full water supply for the irrigation of 250,000 acres presently dry farmed. Water for irrigation and the various other purposes would be pumped or diverted by gravity from Lake Sakakawea into a regulating reservoir on a drainage divide between the

PROJECT DATA SHEET - 2
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

DESCRIPTION - AUTHORIZED 250,000-ACRE PLAN: (continued) Souris, James, and Sheyenne Rivers. From there, water would be routed and released as needed. The plan provides for restoration of Devils and Stump Lakes, for pollution abatement, municipal and industrial water, recreation, conservation of fish and wildlife, and flood control.

DESCRIPTION - COMMISSION PLAN: The Commission Plan is located in central and eastern North Dakota. Counties in which facilities are located include Dickey, Eddy, Foster, LaMoure, McHenry, Nelson, Ramsey, Sargent, Sheridan, Stutsman, Ward, and Wells. This multipurpose plan would provide municipal, rural, and industrial water service to as many as 130 towns and rural areas. Missouri River water would be made available to irrigate 130,940 acres of land including 17,580 acres on Fort Berthold and Standing Rock Indian Reservations. Municipal, rural, and industrial water delivery into the Hudson Bay Drainage would be treated to avoid biota transfer to Canada. The plan also includes measures for mitigation and enhancement of wetlands and recreation.

OTHER INFORMATION: Funds to initiate preconstruction work were appropriated in fiscal year 1966 and for construction in fiscal year 1967. The program for fiscal years 1986 and 1987 schedules construction on those features that are common to the authorized plan and the Commission's plan. The fiscal year 1986 Energy and Water Development Appropriation Act contains the following provisions: ". . . That none of the funds made available by this or any other appropriations act shall be obligated or expended for construction (including land acquisition) of the Garrison Diversion Unit, North Dakota, unless the Congress has, prior to March 31, 1986, enacted legislation reformulating the Unit: Provided further, that this restriction shall not apply to the expenditure of funds pursuant to contracts that have been awarded prior to October 1, 1985." Funds are requested for FY 1987 at a level which assumes that legislation to reformulate the project will not be enacted and the project will be shutdown. A fiscal year 1987 supplemental appropriation will be considered in an amount consistent with any authorizing legislation enacted.

GARRISON DIVERSION UNIT COMMISSION: In accordance with Title II, Section 207 of Public Law 98-360, a Secretrial Commission (The Garrison Diverion Unit Commission) was established on August 11, 1984, to examine the water needs of North Dakota and propose development alternatives which will lead to the early resolution of problems identified with the authorized project. The Final Report containing the conclusions and recommendations of the Commission was submitted to the Secretary of the Interior, the chairmen of the Senate Committees on Energy and Natural Resources and Appropriations, and the House Committee on Interior and Insular Affairs and Appropriations on December 20, 1984. In accordance with Public Law 98-360, the Secretary is authorized and directed to implement the recommendations of the Commission report consistent with existing authority. The Commission recommended that the Secretary of the Interior proceed immediately to construct those portions of the Commission Plan that are a part of the 1965 authorized initial stage.

The Commission recommended that Lonetree Dam, which was a part of the original Garrison Diversion Unit plan authorized by the Congress in 1965, be deferred pending a determination by the Secretary of the Interior consisting of a demonstration of need and satisfactory conclusion of consultations with Canada. At the 33,000-acre Lonetree Reservoir site, the Commission recommended that the land acquisition be completed with the area to be retained in United States ownership and managed for

GARRISON DIVERSION UNIT COMMISSION: (continued) wildlife purposes by the State. The 28-mile-long Sykeston Canal will serve as a functional replacement for Lonetree Dam and Reservoir by joining the existing McClusky Canal to the west with the partly completed New Rockford Canal to the east. It will convey Missouri River water eastward for eventual delivery to the New Rockford Canal and the James River to supply irrigation areas in the central and southeastern part of the State, as well as 100 cubic feet per second of treated waters to the Sheyenne River to supply the Fargo and Grand Forks areas.

A facility to treat Missouri River waters destined for release to the Sheyenne River would be located near the confluence of the Sykeston and New Rockford canals. It would include provision for treatment, as necessary to accommodate Canadian concerns regarding biota transfer.

A part of the cost to construct municipal, rural and industrial water systems would be provided from Federal revenue sources. Specificially, the cost to users would be limited to $10 per month per household, or the operating and maintenance cost of the system, whichever is greater. Remaining costs would be absorbed without interest. This is intended to provide affordable water service to the greatest numbers of North Dakota residents.

Contracts for repayment, operation and maintenance would be required before water service would be provided for municipal and industrial purposes as well as for irrigation. A reservoir at the Glover site near Oakes would be substituted for the originally planned Taayer Reservoir. It would act as a re-regulating facility of James River waters for delivery to the West Oakes irrigation area and to provide control of waters flowing downstream to South Dakota.

The Commission also recommended construction of an outlet from Devils Lake to the Sheyenne River and future funding for an inlet contingent upon the results of a Corps of Engineers study now in progress and successful consultations with Canada. Stabilization and freshening of Devils Lake has been an enduring issue of concern in the State.

Several provisions were recommended by the Commission in behalf of the Fort Berthold, Standing Rock Sioux, and Fort Totten Indian Reservations. It directed the Secretary of the Interior to appoint a five-member commission to consider by October 1, 1985, a series of potential developments for the Three Affiliated Tribes at Fort Berthold and the Standing Rock Sioux. These include full potential for irrigation, financial assistance for on-farm development costs, replacement of infrastructures lost to the filling of Lakes Sakakawea and Oahe, preferential rights to Pick-Sloan power, development of shoreline recreation, return of excess lands, additional financial compensation, protection of reserved water rights, and funding of all these items from Garrison Unit appropriations, if authorized. Cost estimates used for various features of the Commission's plan are of "preappraisal" grade.

The Commission also recommended that the Secretary propose enabling legislation to Congress by February 15, 1985, or as soon as practicable, to assure authority to implement any part of the Commission plan which is determined to be beyond current authorization. If, by the sine die adjournment of the 99th Congress, legislation authorizing the Secretary to

PROJECT DATA SHEET - 4
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

GARRISON DIVERSION UNIT COMMISSION: (continued) implement the Commission plan has not been enacted into law, the Commission recommended that the Initial Stage Garrison Diversion Unit be carried forward and all recommendations of the Commission be dismissed except features of the Commission Plan which were previously authorized by Congress.

The Commission also recommended that the Secretary of the Interior proceed immediately with advance planning actions leading to preconstruction reports, NEPA compliance, final designs, and prompt implementation of the remaining features of the Commission Plan, in close coordination with the State of North Dakota.

On January 23, 1985, the Secretary of the Interior announced that he had begun to implement the recommendations of the Commission. After reviewing an internal Departmental Task Force analysis of the Commission's recommendations, the Secretary proceeded to implement all phases of the project that are authorized, funded, and recommended by the Commission.

On February 5, 1985, the Secretary, through the Assistant Secretary of Water and Science, transmitted to the Congress a draft bill which would provide the Secretary the additional authority to implement all of the Commission's recommendations. H.R. 1116 was identical to that draft.

On May 9, 1985, the Assistant Secretary for Water and Science wrote to the Chairman, Committee on Interior and Insular Affairs stating the Administration's position on H.R. 1116. The Administration generally supports the provisions of H.R. 1116; however, it was recommended certain changes be considered in the configuration of municipal, rural, and industrial water systems. The Commission recommended that revenue from the sale of Pick-Sloan system hydropower be used to assist in the repayment of the municipal, rural, and industrial water supply system it recommended to be built for the State of North Dakota. The State has proposed a refinement to the plan, popularly referred to as the North Dakota plan. The Administration recommended that the Congress consider a third option, which could be considered a hybrid of the Commission's recommendation and the North Dakota plan. Specific recommendations for changes to H.R. 1116's language were made to be consistent with this hybrid option. On June 25, 1985, H.R. 1116 was withdrawn; however, S495 is pending which would provide the Secretary additional authority to implement the Commission's recommendations. S.1785, introduced on October 23, 1985, would authorize the Secretary of the Interior to implement the Commission's recommendations provided that the capital repayment assistance from power revenues shall be limited to the irrigation features of the project.

CANADIAN CONCERNS: The Canadian Government, through diplomatic notes and testimony at public meetings, provided comments for consideration by the Garrison Diversion Unit Commission. In diplomatic Note No. 693 dated December 12, 1984, the Government of Canada in comments on the Preliminary Final Report of the GDU Commission, indicated that the proposed irrigation and municipal rural and industrial water systems could lead to satisfactory resolution of the transboundary issues associated with the authorized Garrison Diversion Unit. The note also stated that future consultations be conducted by the existing Canada/U.S. Consultative Group. The Commission, in its final report, recommended that further interaction take place between the two countries.

PROJECT DATA SHEET - 5
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

CANADIAN CONCERNS: (continued) On March 26, 1985, the Government of Canada, through diplomatic Note No. 201, confirmed its assessment of the Commission Plan that, as a package, the Plan "does not pose a threat to Canadian waters and once approved by Congress, should resolve longstanding problems on the Canada-United States Agenda." This note was provided in support of the Commission Plan which is being considered by the Committee on Interior and Insular Affairs and to reaffirm the Canadian views to the Governor of North Dakota.

Footnotes:

1/ Completion date for the unit is not firm because of pending implementation of recommendations of the Garrison Diversion Unit Commission.

2/ Completion percentage based on the current 250,000 acre authorized plan is approximately 26 percent. The completion percentage based on the Garrison Commission recommended plan is 17 percent.

3/ Lands included in the 250,000-acre plan were certified for gravity irrigation in March 1966. Recertification is required because of the change from gravity to sprinkler irrigation. The 5,000 acres for the Oakes test area were recertified in April 1981. Other lands are scheduled for recertification prior to initiating construction in specific irrigation areas, including the lands proposed under the Garrison Diversion Unit Commission Plan.

4/ Definite Plan Report for the 250,000-acre plan was approved February 21, 1966. The Garrison Diversion Unit Commission proposed an alternate plan in their report dated 12/20/84. Implementation of the Commission's Plan was approved by the Secretary of the Interior in a decision document dated January 15, 1985.

5/ B/C ratios for the authorized 250,000-acre plan are 1.4 direct and 2.4 total. These changed from 1.5 direct benefits and 2.5 total benefits as presented in FY 1986 Budget Justifications. The benefits and costs have been updated and indexed to October 1986 levels. The increase in costs exceeded the increase in benefits. The ratios were computed by using the authorized interest rate of 3.125 percent. Benefit/cost ratios for the Commission Plan are 1.0 direct and 1.4 total.

PROJECT DATA SHEET - 6
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

Footnotes: (continued)

6/ Below is the summarized financial data for the current authorized 250,000-acre plan and the Commission Plan:

	Current Authorized Plan	Commission Plan
Total Federal Obligations (Reclamation) 11/	$1,402,193,034	$1,410,896,034
Net Property and Other Transfers:		
Federal Participation	10,992,000	10,992,000
Nonfederal Participation b/	207,966	207,966
Adjustment c/	49,260,000	72,850,000
Total to be Allocated	$1,462,653,000	$1,494,946,000
Allotments to September 30, 1985	$ 243,394,910	$ 243,394,910
Allotments for FY 1986	23,851,000	23,851,000
Allotments to Date	$ 267,245,910	$ 267,245,910
Allotments Required for FY 1987	18,000,000	$ 18,000,000
Balance to Complete after FY 1987	1,177,407,090	1,209,700,090

b/ Funds advanced by Garrison Diversion Conservancy District for construction of district headquarters building.

c/ Includes, for the authorized plan, interest-free pumping power investment of $21,723,000, main-stem storage cost of $22,500,000, interest during construction for municipal and industrial water of $4,364,000, reimbursable interest during construction of $1,000 associated with assigned costs for potential power at Jamestown Dam, $292,000 for recreation, and $380,000 for fish and wildlife enhancement. Includes for the Commission plan, interest-free pumping power investment of $27,634,000, assigned main-stem storage cost of $11,794,000, interest during construction for municipal and industrial water of $32,433,000, reimbursable interest during construction of $1,000 associated with assigned costs for potential power at Jamestown Dam, $466,000 for recreation, and $522,000 for fish and wildlife enhancement.

PROJECT DATA SHEET - 7
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

Footnotes: (continued)

7/ Allocations for both plans are shown below:

Allocation	Current Authorized Plan	Commission Plan
Irrigation	$1,198,853,000	$ 843,665,000
Power	38,000	38,000
M&I Water	67,835,000	546,369,000
Recreation	68,111,000	26,812,000
Fish and Wildlife	119,353,000	69,599,000
Flood Control	2,813,000	2,813,000
Highway Improvements	4,650,000	4,650,000
Other e/	1,000,000	1,000,000
Total	$1,462,653,000	$1,494,946,000

Explanation of changes in allocation from FY 1986 Budget Justifications: (Current authorized plan). Allocations for the Commission Plan were not presented in the FY 1986 Budget Justifications.

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$1,055,885,000	$1,198,853,000
Power d/	38,000	38,000
Municipal and Industrial Water	59,626,000	67,835,000
Recreation	59,978,000	68,111,000
Fish and Wildlife	105,106,000	119,353,000
Flood Control	2,813,000	2,813,000
Highway Improvements	4,650,000	4,650,000
Other e/	1,000,000	1,000,000
Total	$1,289,096,000	$1,462,653,000

Explanation	
Cost Indexing (Oct. 1985 to Oct. 1986)	$ 162,324,000
Interest during Construction	11,233,000
Total	$ 173,557,000

PROJECT DATA SHEET - 8
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

Footnotes: (Continued)

d/ Represents assigned costs of Jamestown Dam for potential power.

e/ Cultural resources activities under Public Law 93-291.

8/ Repayment for both plans would be as shown below:

	Current Authorized Plan	Commission Plan
Amount Repaid by Irrigators	$ 19,296,000	$ 8,729,000
Amount Repaid by Power	1,179,383,214	1,123,077,214
Amount Repaid by M&I Water	67,835,000	256,700,000
Recreation	7,402,000	7,871,000
Fish and Wildlife	3,372,000	16,291,000
Non-Federal Contributions	211,786	211,786
Indian Deferred	---	1,354,000
Nonreimbursable	185,153,000	80,712,000
Total	$1,462,653,000	$1,494,946,000

The scheduled amounts to be repaid by irrigators and municipal and industrial water interests are covered by existing contracts (current authorized plan) or will be covered by contracts before construction on these areas begins (Commission Plan). The amount to be repaid by power is currently identified for repayment from net power revenues generated by the Pick-Sloan Missouri Basin Program power rate.

The scheduled amount to be repaid by recreation is covered by existing contracts. $3,050,000 of this amount is recreation lands to be donated by the Garrison Diversion Conservancy District (C-District). As of September 30, 1985, land with a value of $2,037,750 had been donated.

The scheduled amount to be repaid by fish and wildlife is covered by existing contracts. $2,400,000 of this amount is fish and wildlife lands to be donated by the Garrison Diversion Conservancy District. As of September 30, 1985, lands with a value of $1,600,000 had been donated.

Non-Federal contributions include $207,966 advanced by the Garrison Diversion Conservancy District for construction of the District headquarters building; land donated by the District for the headquarters building valued at $3,500; and $320 donation from Sheridan County for highway construction.

Repayment by irrigators on Indian land is deferred under the Leavitt Act (P.L. 240 July 1, 1932).

PROJECT DATA SHEET - 9
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

Footnotes: (Continued)

Nonreimbursable costs for the current authorized plan include $115,981,000 fish and wildlife, $60,709,000 recreation, $2,813,000 flood control, $4,650,000 for construction of highways to current standards under Public Law 93-251, and $1,000,000 for cultural resources activities under Public Law 93-291. For the Commission Plan, nonreimbursable costs include $53,308,000 fish and wildlife, $18,941,000 recreation, $2,813,000 flood control, $4,650,000 for construction of highways to current standards under Public Law 93-251, and $1,000,000 for cultural resources activities under Public Law 93-291.

9/ Amounts per acre for both plans are shown below:

	Current Authorized Plan	Commission Plan
Irrigation Investment per Acre	$4,795	$ 6,443
Repayment of Investment per Acre:		
By Irrigators f/	77	77
By Power Revenues	4,717	6,364
By M&I Water Users		---
By Contributions	1	2
Payment Capacity per Acre	25.70	25.70
Annual Charges:		
O&M	24.50 g/	24.50 g/
Construction	1.20	1.20
Total	$25.70 g/	$25.70 g/

f/ Of the amount shown, $17 will be repaid by Garrison Conservancy District revenues under existing contracts and the balance will be repaid by irrigators. The amount shown for the Commission Plan will be repaid based on 113,360 acres of non-Indian owned acreage. Under the Leavitt Act, the 17,580 acres under Indian ownership are exempt from repayment liability.

g/ The increase of $0.20 per acre from the FY 1986 Budget Justifications is due to indexing estimated operation, maintenance, and replacement (OM&R) costs.

PROJECT DATA SHEET - 10
Pick-Sloan Missouri Basin Program
Garrison Diversion Unit, North Dakota

Footnotes: (Continued)

10/ Project-wide final environmental statement was filed with Council on Environmental Quality January 10, 1974. Supplemental - Fish and Wildlife filed with Council on Environmental Quality on May 3, 1974. Final comprehensive supplemental to Final Environmental Statement filed with Environmental Protection Agency on March 7, 1979.

11/ Appropriations authorized for the 250,000-acre plan are $1,058,133,000 (October 1986). The comparable Federal obligation is $1,402,193,034. This exceeds the appropriation ceiling by more than 5 percent but the differential is less than the amount for contingencies included in the obligation. Appropriate Congressional committees will be advised of the estimated appropriation ceiling and obligation status for this project. Additional appropriation ceiling will be requested when it appears certain that the Federal obligation will exceed the authorized appropriation ceiling limitation. It is estimated that the Federal obligation of the Garrison Commission's recommended plan would be $1,410,896,034. No appropriation ceiling has been established for this plan.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $1,204,000, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 11
(250,000-acre Authorized Plan and
Commission Recommended Plan)

COMPLETED WORK:

Jamestown Reservoir and Dam

Dam:
Type - Earthfill
Hydraulic Height - 64 Feet
Crest Length - 1,420 Feet
Base Width - 780 Feet

Spillway:
Type - Morning glory
Design Discharge - 2,930 Cubic Feet per Second

Reservoir Capacity:
Total Capacity - 380,000 Acre-feet

CONSTRUCTION PROGRAM:

Principal Supply Works

Snake Creek Pumping Plant
Three Units - 8,000 hp each
Capacity: 683.3 Cubic Feet per Second per unit

McClusky Canal. -
Length - 73.6 Miles
Capacity: 1,950 Cubic Feet per Second

Bottom Width - 25 Feet
Water Depth - 17.3 Feet

Sykeston Canal 1/
Length - 25.8 miles
Bottom width - 44 feet
Water depth - 10.4 feet
Capacity: 1,600 Cubic Feet per Second

McClusky Canalside Irrigation 1/
Distribution System - 6 miles pipe
Drains - 50 miles pipe
Irrigation - 4,000 acres

1/ Garrison Commission recommended plan.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 12

Lonetree Reservoir and Dams 1/

Lonetree Dam:
  Type - Earthfill
  Structural Height - 90 Feet
  Crest Length - 3,200 Feet
  Base Width - 540 Feet

Spillway:
  None

Reservoir Capacity:
  Total Capacity - 534,700 Acre-feet

Wintering Dam:
  Type - Earthfill
  Structural Height - 40 Feet
  Crest Length - 5,180 Feet
  Base Width - 320 Feet

James River Dike:
  Type - Earthfill
  Structural Height - 27 Feet
  Crest Length - 940 Feet
  Base Width - 170 Feet

Souris Section 2/

Velva Canal:
  Length - 84.3 Miles
  Bottom Width - Reach 1 - 48.0 Feet, Reach 2 - 40 to 33 Feet, and Reach 3 - 33 to 12 Feet
  Water Depth - Reach 1 - 11.3 Feet, Reach 2 - 11.2 to 9.0 Feet, and Reach 3 - 9.0 to 4.6 Feet
  Capacity ranges from 2,000 to 160 Cubic Feet per Second

1/ Garrison Commission recommended that completion of construction be deferred pending a determination of need by the Secretary of the Interior and satisfactory conclusion of consultations with Canada.

2/ Not included in the Garrison Commission's recommended plan. Construction is deferred due to proposed irrigated lands draining into Canadian waters. The Commission recommended that all irrigation be restricted to lands that drain into the Missouri River Basin to meet the concerns of Canada and that the effort to devise an acceptable resolution to Canadian concerns continue.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 13

Souris Section (continued)

Karlsruhe Irrigation Area:
Distribution System 39 Miles
Drains - 64 Miles
Irrigation - 12,200 Acres.

Middle Souris Irrigation Area:
Distribution System - 279 Miles
Drains - 1,024 Miles
Irrigation - 103,800 Acres.

Oakes Section

Oakes (West Side) Test Area
Service area 5,000 Acres (designed to serve 7,800 acres).

Oakes Pumping Plant
Eight units - horsepower has not been determined

Capacity: Three units at 18.7 Cubic Feet per Second each
Five units at 56 Cubic Feet per Second

West Side Irrigation Facilities 1/
Distribution System - 51 miles
Drains - 121 miles
Irrigation - 14,660 acres

Oakes Canal
Length - 2.0 miles

Capacity:
25 Cubic Feet Per Second

Taayer Reservoir, Dike & Pumping Plant 2/

1/ West Oakes 5,000-acre test area is not included in the total for West Side irrigation facilities.

2/ Not included in the Garrison Commission recommended plan. The Commission recommended that the first phase (17,000 acre-feet) of the Glover Reservoir be included as a feature of the plan in lieu of Taayer Reservoir; therefore, construction of this feature is no longer planned.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 14

Oakes Section (continued)

Feet per Second

Glover Reservoir and Dike 1/

East Side Irrigation Facilities 2/
  Distribution System - 62 Miles
  Drains - 179 Miles
  Irrigation - 26,320 Acres

LaMoure Section

LaMoure Irrigation Facilities
  Distribution System - 39 Miles
  Drains - 67 Miles
  Irrigation - 13,350 Acres

Central North Dakota Section

New Rockford Canal
  Length - 53.0 Miles
  Bottom Width - Reaches 1 and 2 - 44 Feet and Reach 3 - 32 Feet
  Water Depth - Reaches 1 and 2 - 10.4 Feet, and Reach 3 - 9.5 Feet.

Capacity: 1,600 to 800 Cubic Feet per Second

New Rockford Canalside Irrigation Area 3/
  Distribution System - 2 miles pipe
  Drains - 15 miles pipe
  Irrigation - 1,200 acres

1/ Physical data not available at this time.

2/ Not included in the Garrison Commission's recommended plan. Construction is deferred due to proposed irrigated lands draining into Canadian waters. The Commission recommended that all irrigation be restricted to lands that drain into the Missouri River Basin to meet the concerns of Canada and that the effort to devise an acceptable resolution to Canadian concerns continue.

3/ Garrison Commission recommended plan - not included in 250,000 acre authorized plan.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 15

Central North Dakota Section (Continued)

James River Feeder Canal

Length 2.6 Miles
Bottom Width - 44.0 Feet
Water Depth - 10.4 Feet

Capacity: 1,600 Cubic Feet per Secon

James River Improvement

Length - 8.4 Miles

Capacity: 450 Cubic Feet per Second

Warwick-McVille Irrigation Area 1/

Distribution System - 178 Miles
Drains - 338 Miles
Irrigation - 47,220 Acres

Devils Lake and Stump Lake Canals 1/

Length 21 Miles
Bottom Width - 18.0 to 24.0 Feet
Water Depth - 5.5 and 6.5 Feet.

Capacity: 400 to 200 Cubic Feet per Second

New Rockford Irrigation Area

Distribution System - 44 Miles
Drains - 179 Miles
Irrigation - 20,935 Acres

New Rockford Irrigation Extension Area 2/

Distribution System - 34 miles open - 46 miles pipe
Drains - 36 miles open - 323 miles pipe
Irrigation - 32,000 acres

1/ Not included in the Garrison Commission's recommended plan. Construction is deferred due to proposed irrigated lands draining into Canada. The Commission recommended that all irrigation be restricted to lands that drain into the Missouri River Basin to meet the concerns of Canada and that the effort to devise an acceptable resolution to Canadian concerns continue.

2/ Garrison Commission recommended plan - not included in 250,000 acre authorized plan.

Central North Dakota Section (Continued)

Lincoln Valley Irrigation Area
Distribution System - 15 Miles
Drains - 108 Miles
Irrigation - 6,515 Acres

Turtle Lake Area 1/
Distribution system - 5 miles open - 25 miles pipe
Drains - 12 miles open - 96 miles pipe
Irrigation - 13,700 acres

Harvey Pumping Irrigation Area 1/
Distribution system - 3 miles pipe
Drains - 25 miles pipe
Irrigation - 2,000 acres

Indian Missouri River Pumping Irrigation Areas 1/

Lucky Mound
Distribution system - 19 miles pipe
Drains - 50 miles pipe
Irrigation - 7,700 acres

Upper Six Mile Creek
Distribution system - 19 miles pipe
Drains - 49 miles pipe
Irrigation - 7,500 acres

Fort Yates
Distribution system - 6 miles pipe
Drains - 16 miles pipe
Irrigation - 2,380 acres

1/ Garrison Commission recommended plan - not included in the 250,000 acre authorized plan.

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 17

Central North Dakota Section (Continued)

Domestic and Rural Water 1/
Municipal and industrial and rural water systems

Capacity: 70,000 Acre-feet

Land and Rights 2/
Quantity - 330,800 Acres
Total Estimated Cost - $143,199,413
Cost Per Acre - $433
Acquisition - 13 percent complete as of September 30, 1985

Relocations 2/
Total Estimated Cost - $15,390,000
Percent Complete - 35 percent complete as of September 30, 1985

Items:	Length (miles)	Total cost	Cost to September 30, 1985
County and State Highways	77	$12,310,000	$5,040,000
Utilities	139	3,080,000	380,000
TOTAL		$15,390,000	$5,420,000

1/ Garrison Commission recommended plan - not included in 250,000 acre authorized plan.

2/ This information is subject to change pending design changes associated with implementation of the Garrison Commission recommended plan.

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA - 18

FISCAL YEAR 1987

Work Proposed	Program
Principal Supply Works and General Facilities	
Snake Creek Pumping Plant. - Provides for continued operation, maintenance, site security, and freshening of Audubon Lake.	$ 200,000
McClusky Canal. - Provides for routine operations and maintenance, and continuation of survey contract, tree planting, noxious weed control, and ditch cleaning and required activities associated with project shutdown.	3,800,000
Lonetree Reservoir and Dams. - Provides for continued noxious weed control, and land management activities.	300,000
Oakes Test Area. - Provides for completion of construction of the distribution system and required activities associated with project shutdown.	3,361,000
West Side Irrigation Facilities. - Provides for completion of required activities associated with project shutdown.	300,000
Oakes Canal. - Provides for completion of required activities associated with project shutdown.	30,000
LaMoure Irrigation Facilities. - Provides for completion of required activities associated with project shutdown.	510,000

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
GARRISON DIVERSION UNIT, NORTH DAKOTA - 19

FISCAL YEAR 1986

Work Proposed (continued)		Program
Central North Dakota Section. -		
New Rockford Canal. - Provides for completion of Reach 1A and required activities associated with project shutdown.		$ 5,000,000
Upper James River Improvement -	Provides for completion of required activities associated with project shutdown.	200,000
Lower James River Improvement. -		2,350,000
New Rockford Irrigation Facilities. -		500,000
New Rockford Extension Irrigation Facilities. -		100,000
General Facilities. -		
Permanent Operating Facilities. -	Provides for completion of required activites associated with project shutdown.	600,000
Fish and Wildlife Facilities. -		700,000
Recreation Facilities. -		30,000
Other Project Costs. -		19,000
	TOTAL	$ 18,000,000

GARRISON DIVERSION UNIT (P-SMBP)

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Completed Work 1/	$ 3,727,379	$ 3,727,379	$ ---	$ ---	$ ---
Construction Program					
Principal Supply Works					
Snake Creek Pumping Plant	21,000,000	19,885,263	100,000	200,000	814,737
McClusky Canal	116,850,000	89,804,165	5,250,000	3,800,000	17,995,835
Skyeston Canal 2/.	45,280,000	36,894	300,000	---	44,943,106
McClusky Canalside Irrigation 2/	10,340,000	---	10,000	---	10,330,000
Lonetree Reservoir and Dams	46,180,000	34,598,559	6,140,000	300,000	5,141,441
Oakes Section					
Oakes (West Side) Test Area	32,300,000	18,918,610	8,830,000	3,361,000	1,190,390
West Side Irrigation Facilities	34,350,000	6,436,628	1,000,000	300,000	26,613,372
Taayer Alternative Site (Glover Reservoir)2/. . . .	43,970,000	287,147	700,000	---	42,982,853
Oakes Canal 2/.	2,920,000	---	60,000	30,000	2,830,000
LaMoure Section					
Irrigation Facilities	36,350,000	2,405,626	560,000	510,000	32,874,374

GPO 881-380

GARRISON DIVERSION UNIT (P-SMBP)

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Completed Work					
Construction Program (Continued)					
Central North Dakota Section					
New Rockford Canal	59,340,000	16,286,177	12,340,000	5,000,000	25,713,823
New Rockford Canalside Irrigation 2/	3,100,000	---	10,000	---	3,090,000
James River Feeder Canal	4,250,000	280,870	10,000	---	3,959,130
Upper James River Improvement	6,800,000	291,264	200,000	200,000	6,108,736
Lower James River Improvement	19,080,000	1,249,136	5,520,000	2,350,000	9,960,864
New Rockford Irrigation Facilities	57,570,000	2,153,891	500,000	500,000	54,415,109
New Rockford Extension Irrigation Facilities 2/. .	82,690,000	---	50,000	100,000	82,540,000
Lincoln Valley Irrigation Facilities	21,310,000	949,958	40,000	---	20,320,042
Turtle Lake Irrigation Facilities 2/	37,200,000	---	200,000	---	37,000,000
Harvey Pumping Irrigation Facilities 2/.	5,800,000	---	50,000	---	5,750,000
Indian Missouri River Pumping Irrigation 2/					
Lucky Mound	27,900,000	---	250,000	---	27,650,000
Upper Six Mile Creek	27,440,000	---	200,000	---	27,240,000
Fort Yates	12,570,000	---	200,000	---	12,370,000
Souris Section					
Hudson Bay Features (Deferred)	561,526,000	18,360,320	---	---	543,165,680
Domestic and Rural Water 2/					
Municipal, Industrial and Rural Water Systems . . .	490,000,000	---	300,000	---	489,700,000
General Facilities					
Permanent Operating Facilities	$ 30,130,000	$ 4,116,287	$ 600,000	$ 600,000	$ 24,813,713
Fish and Wildlife Facilities	132,390,000	10,455,592	10,150,000	700,000	111,084,408

GPO 831-380

GARRISON DIVERSION UNIT (P-SMBP)

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

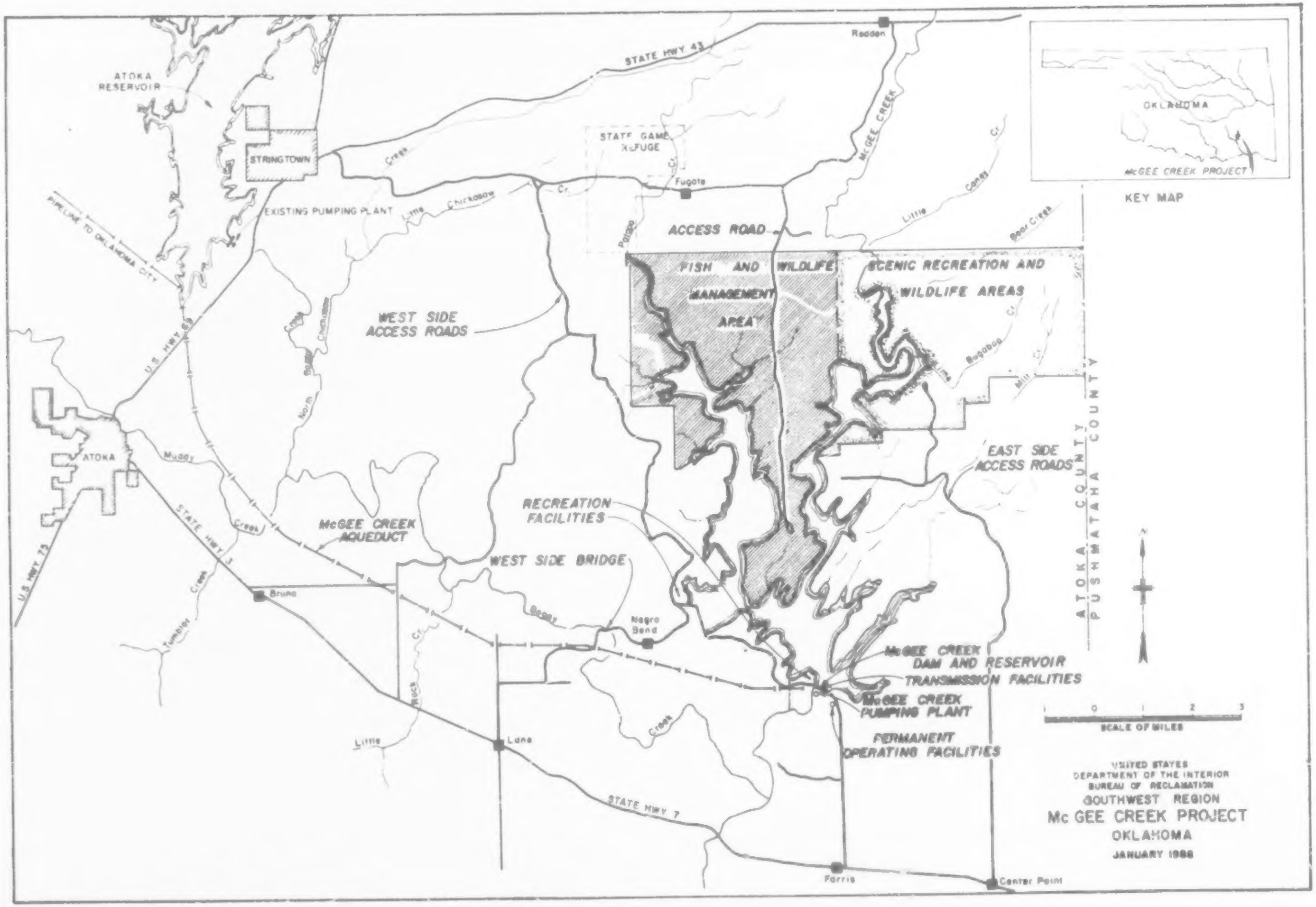
PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
General Facilities (Continued)					
Recreation Facilities	12,111,000	2,943,961	1,861,000	30,000	7,276,039
Temporary Camps	500,000	---	---	---	500,000
Service Facilities, Depreciation, and Salvage . . .	1,093,599	-394,729	1,685,000	---	-196,672
Engineering and Design.	(187,451,344)	(39,807,165)	(6,214,122)	(4,914,975)	(136,515,082)
Supervision and Administration.	(282,577,250)	(59,710,747)	(9,321,182)	(7,372,463)	(206,172,858)
Relocations	(15,390,000)	(5,420,000)	(---)	(---)	(9,970,000)
Total Construction Costs	1,986,067,978	232,792,998	57,116,000	17,981,000	1,678,177,980
Other Project Costs	11,491,988	760,487	89,027	19,000	10,623,474
Total Project Costs	1,997,599,966	233,553,485	57,205,027	18,000,000	$1,688,841,454
Non-federal Participation (Conservancy District Contribution)	-207,966	-207,966	---	---	---
Consolidated Expenditures and Credits	-10,992,000	-10,004,636	---	---	-987,364
Total Expenditures	1,986,360,000	223,340,883	57,205,027	18,000,000	$1,687,814,090
Undelivered Orders	---	20,054,027	-20,054,027	---	---
Total Obligations 3/ (Reclamation)	$1,986,360,000	$243,394,910	$37,151,000	$18,000,000	$1,687,814,090
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$23,851,000	$18,000,000	$1,687,814,090
Application of prior year funds	---	---	---	---	---
Underfinancing	---	---	13,300,000	---	---

1/ Jamestown Dam and Reservoir.

2/ Recommended by Garrison Commission. Estimated costs are included in totals.

3/ Total obligations for the current 250,000-acre authorized plan are $1,402,193,034 and total obligations for the Commission plan are $1,410,896,034. These differences are caused by the fact that the construction schedule does not reflect solely one plan. The schedule includes the items which are common to both plans and also those items from each plan that are unique to that plan. When a final determination of project reformulation is made by Congress, all figures will be changed to reflect that reformulation.

GPO 831-380


ATOKA RESERVOIR
STRINGTOWN
STATE HWY 43
Redden
STATE GAME REFUGE
Fugate
McGEE CREEK
Little Coney Cr.
Bear Creek
EXISTING PUMPING PLANT
Little Chickasaw Cr.
PIPELINE TO OKLAHOMA CITY
ACCESS ROAD
Potapo Cr.
FISH AND WILDLIFE MANAGEMENT AREA
SCENIC RECREATION AND WILDLIFE AREAS
Bugaboo Cr.
Mill Cr.
WEST SIDE ACCESS ROADS
U.S. HWY 69
North Boggy Chickasaw Creek
ATOKA
Muddy Creek
STATE HWY 3
U.S. HWY 75
McGEE CREEK AQUEDUCT
RECREATION FACILITIES
WEST SIDE BRIDGE
EAST SIDE ACCESS ROADS
ATOKA COUNTY
PUSHMATAHA COUNTY
Bruno
Tumbley Creek
Rock Cr.
Boggy
Negro Bend
McGEE CREEK DAM AND RESERVOIR
TRANSMISSION FACILITIES
McGEE CREEK PUMPING PLANT
PERMANENT OPERATING FACILITIES
Creek
Little
Lane
STATE HWY 7
Farris
Center Point
N
1 0 1 2 3
SCALE OF MILES
OKLAHOMA
McGEE CREEK PROJECT
KEY MAP
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHWEST REGION
Mc GEE CREEK PROJECT
OKLAHOMA
JANUARY 1986

REGION: Southwest

PROJECT DATA SHEET

PROJECT AND STATE: MCGEE CREEK PROJECT, OKLAHOMA

Completion Date:	% Complete	Date
1/ 1986	80	1/31/86

AUTHORIZATION: Public Law 94-423, September 28, 1976, and
Public Law 98-63, July 30, 1983

LAND CERTIFICATION: None required: DEFINITE PLAN REPORT: Approved January 18, 1979

BENEFIT COST RATIOS

Based on Direct: Benefits	Based on Total: Benefits	Date
2/ 2.2	2/ 2.2	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 10/	$ 105,635,000	Allotments to September 30, 1985	$83,903,787
Total Federal Obligations(Other)		Allotments for FY 1986 a/	6,645,000
Net Property and Other Transfers:			
Federal Participation 3/	420,000	Allotments to Date	$90,548,787
Non-Federal Participation non-cash 4/	1,000,000	Allotments Required for FY 1987	7,755,000
Adjustment 5/	16,807,000	Balance to Complete after FY 1987	$ 7,331,213
Total to be Allocated	$ 123,862,000		

ALLOCATIONS 6/	
Irrigation	$
Power	
M&I Water	94,087,000
Recreation	3,062,000
F&WL	1,355,000
Flood Control	2,049,000
Scenic WL Areas	11,250,000
State-County	
Other 7/	12,059,000
Total	$ 123,862,000

REPAYMENT	
Amount Repaid by:	
Irrigators	$
Power	
M&I Water 8/	94,087,000
Recreation 8/	1,000,000
Fish and Wildlife 8/	114,000
Nonreimbursable 9/	28,661,000
	$123,862,000

AMOUNTS PER ACRE

Irrig. Invest/Acre $
Repayment of Investment per Acre:
By Irrigators
By Power Revenues

Payment Capacity per Acre-Foot: $ to $
Annual Charges:
O&M
Construction

STATUS OF REPAYMENT CONTRACT: Repayment contract with the McGee Creek Authority covering the reimbursable costs for municipal and industrial water, recreation, and fish and wildlife was executed October 11, 1979 and validated April 28, 1980.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Environmental Protection Agency November 8, 1978. The final supplement was filed on September 28, 1983.

DESCRIPTION: The project is located on McGee Creek in Atoka County in southeastern Oklahoma. The plan consists of construction of McGee Creek Dam and Reservoir, water conveyance facilities, public recreation facilities, and a scenic recreation area. The project will provide a municipal and industrial water supply of 71,800 acre-feet annually for Oklahoma City and surrounding communities. Flood control, water based recreation, fish and wildlife enhancement, and the establishment of a natural scenic area will also be developed as part of the project plan.

PROJECT DATA SHEET - 2
McGee Creek Project, Oklahoma

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in fiscal year 1978 and for construction in fiscal year 1980. An 8-year construction period will be required to construct this project.

Footnotes:

1/ The project is scheduled to be operational in June 1986. This reflects a 9-month delay from the FY 1986 Budget Justifications. This delay was caused by unusually wet weather conditions during the fall and winter of 1984-1985 which halted construction work on McGee Creek Dam. Fish and wildlife mitigation features will be completed in 1987 and construction of access roads and recreation facilities will be completed in 1988. Completion of the access roads has been accelerated 2 years from that shown in the FY 1986 Budget Justifications due to anticipated savings on construction of the pumping plant and aqueduct.

2/ The ratios based on direct and total benefits are 2.2 and reflects no change from that presented in the FY 1986 Budget Justifications. Project costs were decreased by a reevaluation of the contingency and noncontract cost requirements necessary to complete the project. The ratios were computed using the authorized interest rate of 6-1/8 percent.

3/ Includes $420,000 of general investigation costs.

4/ Represents labor and materials furnished by State of Oklahoma as the reimbursable portion of the recreation facilities.

5/ Includes interest during construction of $16,794,000 for municipal and industrial water and $13,000 on the reimbursable portion of fish and wildlife. Interest during construction will not be charged to recreation as the payment entity will furnish labor and materials for their share of the facilities.

6/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Municipal and Industrial Water	$100,078,000	$ 94,087,000
Recreation	3,088,000	3,062,000
Fish and Wildlife.	1,337,000	1,355,000
Flood Control.	2,005,000	2,049,000
Natural Scenic and Wildlife Area	11,373,000	11,250,000
Other.	11,785,000	12,059,000
Total	$129,666,000	$123,862,000

PROJECT DATA SHEET - 3
McGee Creek Project, Oklahoma

Footnotes: (Continued)

Explanation	Amount of Change
Reduction in contingencies as contracts near completion	-5,933,000
Adjustments to bid prices and rounding adjustments.	-1,135,000
Reevaluation of noncontract cost requirements	-1,110,000
Interest during construction.	-865,000
Quantity overruns and contract modifications on McGee Creek Dam and Pumping Plant	$+2,401,000
Revised estimate of land and rights	+838,000
Total.	$-5,804,000

7/ Includes $323,632 for nonreimbursable preauthorization investigation costs (Public Law 92-149), $1,483,211 for nonreimbursable cultural resources activities (Public Law 93-291), $10,016,145 for nonreimbursable road construction (Public Law 98-63), and $236,012 for operation and maintenance during construction.

8/ The scheduled amount to be repaid is covered by existing contracts with the project beneficiaries.

9/ Includes $2,049,000 for flood control, $1,241,000 for fish and wildlife, and $2,062,000 for recreation, $1,483,211 for cultural resources activities (Public Law 93-291), $323,632 for preauthorization investigation costs (Public Law 92-149), $11,250,000 for natural scenic and wilderness area, $10,016,145 for roads (Public Law 98-63), and $236,012 for operation and maintenance during construction.

10/ Appropriations authorized are $141,255,000 (October 1986). The authorization is adequate to cover this project as currently proposed. The authorized appropriation ceiling decreased from that shown in the FY 1986 Budget Justifications due to last year's overestimation of projected 1984 and 1985 inflation rates.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $285,735, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY1987 Budget Justifications.

MCGEE CREEK PROJECT, OKLAHOMA

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

McGee Creek Dam and Reservoir 1/

Dam	Spillway	Reservoir Capacity
Type - Earthfill	Type - Uncontrolled Open Cut	Total Storage - 237,700 acre-feet
Structural Height - 164 feet (50 meters)	Design Discharge - 47,000 cubic feet per second (1,331 cubic meters per second)	
Crest Length - 1,995 feet (596 meters)		

McGee Creek Pumping Plant

Units - 4
Horsepower - 4 - 800
Capacity - 140 cubic feet per second

McGee Creek Aqueduct

Length - 16.7 miles
Diameter - 90 to 72 inches

Transmission Facilities

Length - 1.0 mile
Capacity - 12 kV

Roads 2/

Length - 43.7 miles

1/ The McGee Creek Dam was designed and is being constructed using the metric system; therefore, the metric measurements of the dam are shown in parenthesis.

2/ Road construction was authorized by Public Law 98-63 on July 30, 1983.

MCGEE CREEK PROJECT, OKLAHOMA

PHYSICAL DATA ON STRUCTURES - 5

Land and Rights

Quantity - 30,340 acres
Total Estimated Cost - $16,493,784
Cost Per Acres - $544
Percent Complete - 61 percent as of September 30, 1985

Relocations

Total Estimated Cost - $377,000
Percent Complete - 100 percent as of September 30, 1985

	Length (miles)	Total estimated cost	Cost to September 30, 1985
Items:			
Atoka County Road	2.1	$229,000	$229,000
Atoka County Road to project Headquarters		65,000	65,000
Cemeteries		30,000	30,000
Plug abandoned wells		48,000	48,000
Various Minor Relocations		5,000	5,000
TOTAL		$377,000	$377,000

Appropriation Title: Construction Program
Construction and Rehabilitation

MCGEE CREEK PROJECT, OKLAHOMA- 6

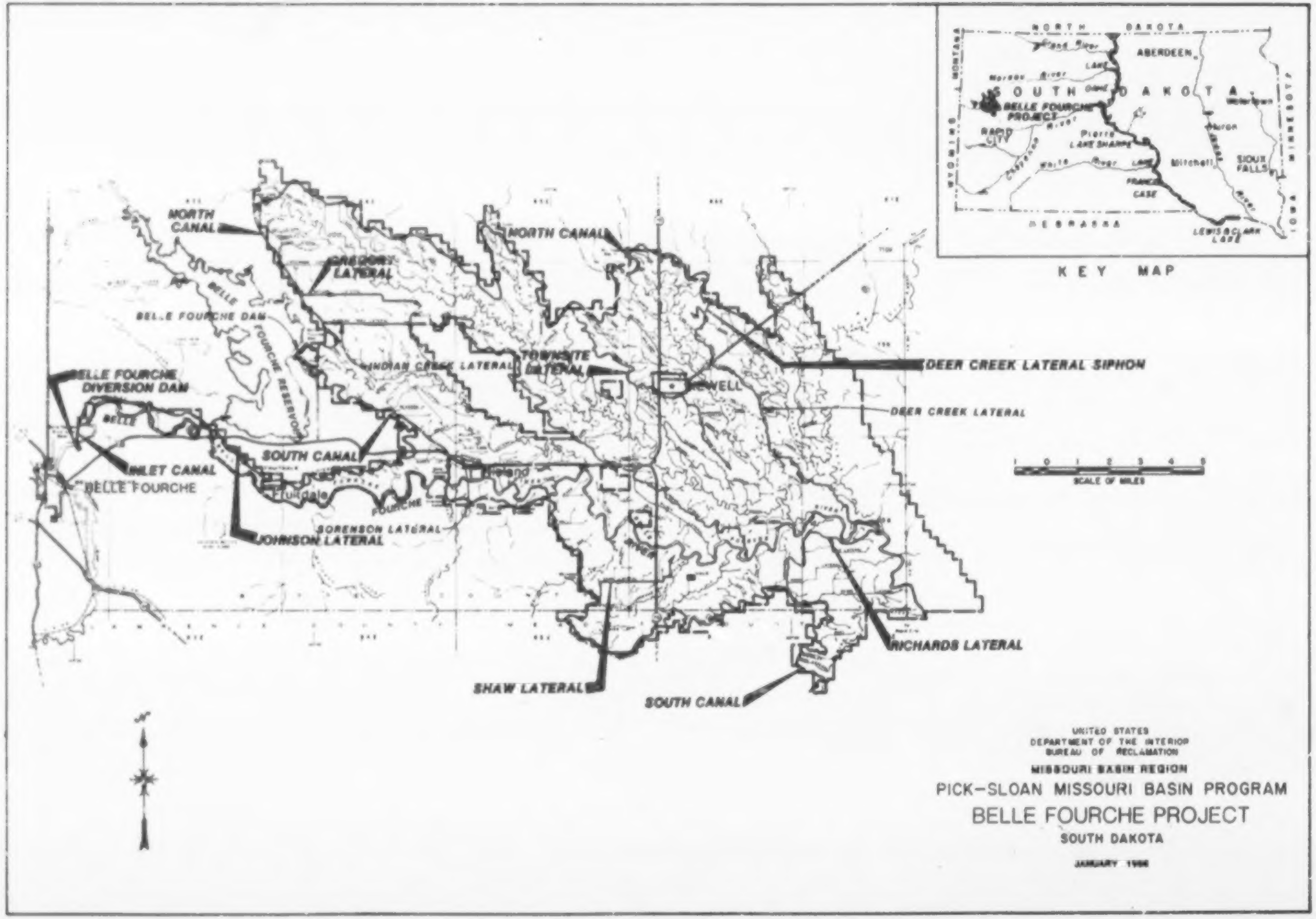
FISCAL YEAR 1987

Work Proposed	Program
McGee Creek Dam and Reservoir. - Acquisition of land and rights will continue.	$1,481,000
Permanent Operating Facilities. - Acquisition of O&M equipment and modification work on the caretaker's facilities will be completed.	227,000
Recreation Facilities. - Construction of Phase III recreation facilities, by the State of Oklahoma will continue.	200,000
Scenic Recreation and Wildlife Area. - Acquisition of land and rights will continue.	1,325,000
Fish and Wildlife Mitigation Facilities. - Acquisition of land and rights will be completed.	256,000
Other Project Cost. - Archeology mitigation will be completed. Construction of access roads will continue.	4,466,000
Consolidated Expenditures and Credits. - Contribution of labor and material by the State of Oklahoma for their cost sharing in the construction of recreation facilities.	-200,000
TOTAL	$7,755,000

MCGEE CREEK PROJECT, OKLAHOMA

PF-40(10-78) SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPT. 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
CONSTRUCTION PROGRAM					
McGee Creek Dam and Reservoir	$57,304,000	$49,225,184	$4,262,000	$1,481,000	$2,335,816
McGee Creek Pumping Plant	3,269,591	2,952,591	317,000	---	---
McGee Creek Aqueduct	17,984,725	17,846,725	138,000	---	---
Transmission Facilities	238,048	238,048	---	---	---
Permanent Operating Facilities	775,931	517,931	31,000	227,000	---
Recreation Facilities	1,972,324	970,324	202,000	200,000	600,000
Scenic Recreation and Wildlife Area	11,450,000	7,063,174	579,000	1,325,000	2,482,826
Hydraulic Instrumentation	145,847	34,847	111,000	---	---
Fish and Wildlife Facilities	404,624	83,624	321,000	---	---
Fish and Wildlife Mitigation Facilities	1,451,284	1,138,284	57,000	256,000	---
Service Facilities, Deprec. and Salvage	---	278,400	---	---	(278,400)
Engineering and Design	[11,246,000]	[10,556,000]	[520,000]	[120,000]	[50,000]
Supervision and Administration	[15,464,916]	[9,934,507]	[1,551,303]	[1,873,873]	[2,105,233]
Relocation Costs	[377,000]	[377,000]	---	---	---
TOTAL CONSTRUCTION COST	$94,996,374	$80,349,132	$6,018,000	$3,489,000	$5,140,242
Other Project Costs	12,058,920	2,921,388	1,975,270	4,466,000	2,696,262
TOTAL PROJECT COST	$107,055,294	$83,270,520	$7,993,270	$7,955,000	$7,836,504
Non-Federal Participation	(1,000,000)	---	(200,000)	(200,000)	(600,000)
Consolidated Expenditures and Credits	(420,294)	(514,683)	(320)	---	94,709
TOTAL EXPENDITURES	$105,635,000	$82,755,837	$7,792,950	$7,755,000	$7,331,213
Undelivered Orders	---	884,950	(884,950)	---	---
TOTAL OBLIGATIONS (RECLAMATION)	$105,635,000	$83,640,787	$6,908,000	$7,755,000	$7,331,213
METHOD OF FINANCING					
Appropriation available and required	---	---	$6,645,000	$7,755,000	$7,331,213
Application of prior year funds	---	---	$263,000		
Non-Federal participation:					
Services in lieu of cash	(1,000,000)	---	(200,000)	(200,000)	(600,000)


NORTH DAKOTA
MONTANA
WYOMING
MINNESOTA
IOWA
NEBRASKA
SOUTH DAKOTA
BELLE FOURCHE PROJECT
ABERDEEN
RAPID CITY
Pierre
LAKE SHARPE
Huron
Mitchell
SIOUX FALLS
FRANCIS CASE
LEWIS & CLARK LAKE
Grand River
Moreau River
Cheyenne River
White River
KEY MAP
NORTH CANAL
GREGORY LATERAL
BELLE FOURCHE DAM
BELLE FOURCHE RESERVOIR
BELLE FOURCHE DIVERSION DAM
INDIAN CREEK LATERAL
TOWNSITE LATERAL
NORTH CANAL
DEER CREEK LATERAL SIPHON
DEER CREEK LATERAL
NEWELL
SOUTH CANAL
INLET CANAL
BELLE FOURCHE
Fruitdale
Vale
SORENSON LATERAL
JOHNSON LATERAL
SHAW LATERAL
SOUTH CANAL
RICHARDS LATERAL
0 1 2 3 4 5
SCALE OF MILES
N

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MISSOURI BASIN REGION

PICK-SLOAN MISSOURI BASIN PROGRAM

BELLE FOURCHE PROJECT

SOUTH DAKOTA

JANUARY 1986

REGION
Missouri Basin

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE PICK-SLOAN MISSOURI BASIN PROGRAM BELLE FOURCHE UNIT, SOUTH DAKOTA	Completion Date 1990 11/	% Complete 1/	Date 1/31/86
AUTHORIZATION Public Law 98-157, November 17, 1983	BENEFIT COST RATIOS		
	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION None required — **DEFINITE PLAN REPORT** None required 2/	3/	3/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	12/	$48,415,000	Allotments to September 30, 1985	$ 816,860
Net Property and Other Transfers:			Allotments for FY 1986	-0-
Federal Participation	4/	7,484,000		
Non-Federal Participation			Allotments to Date	816,860
Adjustment			Allotments Required for FY 1987	3,900,000
Total to be Allocated		$55,899,000	Balance to Complete after FY 1987	$43,698,140

ALLOCATIONS		
Irrigation	5/	$52,338,000
Power		
M & I Water		
Recreation		
F & WL		
Flood Control		
Other	6/	3,561,000
Total		$55,899,000

REPAYMENT		
Amount Repaid by Irrigators	7/	$12,039,000
Amount Repaid by Power	8/	40,299,000
Amount Repaid by M & I Water		
Nonreimbursable	6/	3,561,000
Total		$55,899,000

AMOUNTS PER ACRE				
Irrig. Invest. per Acre	$917	Payment Capacity per Acre		$14.30
Repayment of Investment per Acre:		Annual Charges:		
By Irrigators	211	O & M	9/	9.41
By Power Revenues	706	Construction	10/	4.89
By M & I Water Users				
		Total		$14.30

STATUS OF REPAYMENT CONTRACT: Repayment contract with Belle Fourche Irrigation District was executed on October 10, 1984, and validated November 2, 1984.

STATUS OF NEPA COMPLIANCE: Projectwide - Finding of No Significant Impact (FONSI UM 80-103) signed June 30, 1980.

DESCRIPTION: The project is located in Butte and Meade Counties of western South Dakota. Construction of the single purpose originally authorized project was completed in 1914 and furnishes a full supply of irrigation water to 57,068 acres of irrigable land. The principal crops grown on the project are alfalfa, hay, and corn. Other crops include oats, barley, and forage crops consisting of silage and grass hay. Most crops are used extensively for livestock feeding in the area. Rehabilitation and betterment construction was accomplished from 1950 to 1953. It consisted of replacement of valves in outlet works of the dam, replacement of major structures in canals and laterals, and improvement of the drainage system. Further modernization and improvement of project facilities is included in the legislation reauthorizing the general plan as a unit of Pick-Sloan Missouri Basin Program. This reauthorized project will (1) restore the reliability of the system, (2) reduce annual operation and maintenance costs; (3) conserve irrigation water by a reduction of seepage losses and operational wastes, (4) provide measuring devices for the equitable and efficient distribution of the water supply, (5) provide safety features for the protection of human life, (6) restore design capacity to the system to avoid overloading it and thus eliminate the risk of system failure, (7) reclaim agricultural lands affected by seepage losses, and (8) ensure the continued social and economic welfare of the area.

PROJECT DATA SHEET - 2
Pick-Sloan Missouri Basin Program
Belle Fourche Unit, South Dakota

OTHER INFORMATION: Funds were first appropriated under the General Investigations appropriations in FY 1976 for preparation of a report to describe a rehabilitation and betterment program. This report was completed in January 1981. Funds to initiate preconstruction activities for the modernization and improvement of project facilities as a unit of the Pick-Sloan Missouri Basin Program were appropriated in FY 1985.

Footnotes:

1/ No construction had been performed under this authorization prior to September 30, 1985.

2/ R&B Report was completed January 10, 1981.

3/ There was no B/C ratio derived for use in the reauthorization process for the Belle Fourche Unit (P.L. 98-157). Studies, completed prior to reauthorization, were for a loan under the Rehabilitation and Betterment Act (63 Stat. 724 as amended and supplemented) which requires no B/C ratio.

4/ Includes $7,354,364 for completed features, $130,000 for preauthorization investigations, and -$364 for rounding.

5/ Includes $3,922,747 from previous construction appropriations and $48,415,253 for this construction program.

6/ Includes $1,918,534 allocated to safety of dams, $130,000 for preauthorization investigations, $33,783 for recreation, $1,479,300 of charge-offs authorized by Congress, and $-617 for rounding.

7/ The amount to be repaid is covered by existing contracts with the project beneficiaries.

8/ The amount to be repaid by power is currently identified for repayment from net power revenues generated by the Pick-Sloan Missouri Basin Program power rate.

9/ Current Operation, Maintenance and Replacement Costs as reported by the Belle Fourche Irrigation District.

10/ Current repayment amounts to $1.17 per acre and will continue until completion of construction. After construction repayment is estimated at $4.89 per acre.

11/ Initial construction will complete in 1990 ($25,000,000), completion date of follow on construction will be determined in the future.

12/ Appropriations authorized are $48,415,000 (October 1986). This authorization is adequate to cover the project as currently proposed.

PICK-SLOAN MISSOURI BASIN PROGRAM
BELLE FOURCHE UNIT, SOUTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 3

PHYSICAL DATA ON STRUCTURES

COMPLETED WORK:

Belle Fourche Dam

Dam: Type - homogeneous earthfill
Structural Height - 122 feet
Crest length - 6,262 feet
Base width (Maximum) - 650 feet

Reservoir Capacity: Total capacity - 192,000 acre-feet

Spillway: Type - Grass-lined channel with uncontrolled crest
Design Discharge - 4,500 cubic feet per second

Drainage System
Drains
Open - 225 miles
Closed - 7 miles

CONSTRUCTION PROGRAM:

Belle Fourche Diversion Dam (original construction)

Dam: Type - Concrete gravity ogee weir with flanking earth dikes.
Structural Height - 36 feet
Weir Crest Length - 400 feet
Total length - 2,523 feet

Diversion Works:
Sluice Gates - Three slide gates, each 5 by 10 feet
Outlet Works - Seven slide gates, each 5 by 10 feet
Diversion Capacity - 3,150 cubic feet per second

Carriage Facilities

Inlet Canal (original construction)

Length - 6.5 miles
Maximum Bottom Width - 40.0 feet
Water Depth - 5.0 feet

Capacity

1,300 cubic feet per second

North Canal (original construction)

Length - 43.0 miles
Maximum Bottom Width - 30.0 feet
Water Depth - 5.0 Feet

Capacity

600 cubic feet per second

PICK SLOAN MISSOURI BASIN PROGRAM
BELLE FOURCHE UNIT, SOUTH DAKOTA
PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM (continued):

South Canal (original construction)

Length - 44.0 miles
Maximum bottom width - 18.0 feet
Water depth - 5.0 feet

Capacity:

325 cubic feet per second

Laterals

Length - 201 miles [1]

Irrigation:

57,068 acres

Capacity:

10 to 125 cubic feet per second

Relocations

None required

---

[1] Length to be rehabilitated. Total of laterals on project is 450 miles.

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
BELLE FOURCHE UNIT, SOUTH DAKOTA - 5

FISCAL YEAR 1987

Work Proposed	Program
Belle Fourche Diversion Dam. - Provides for preconstruction activities.	$ 260,000
North Canal. - Provides for completion waterway construction & structures contract #1 and Indian Creek inlet contract and award of waterway and structures contract #2.	900,000
South Canal - Provides for completion of waterway construction & structures contract #1 and award of waterway and structures #2.	805,000
Laterals - Provides for award and completion of various lateral structures and lining contracts, and completion of a pipeline and inlet structures contract.	1,935,000
TOTAL	$3,900,000

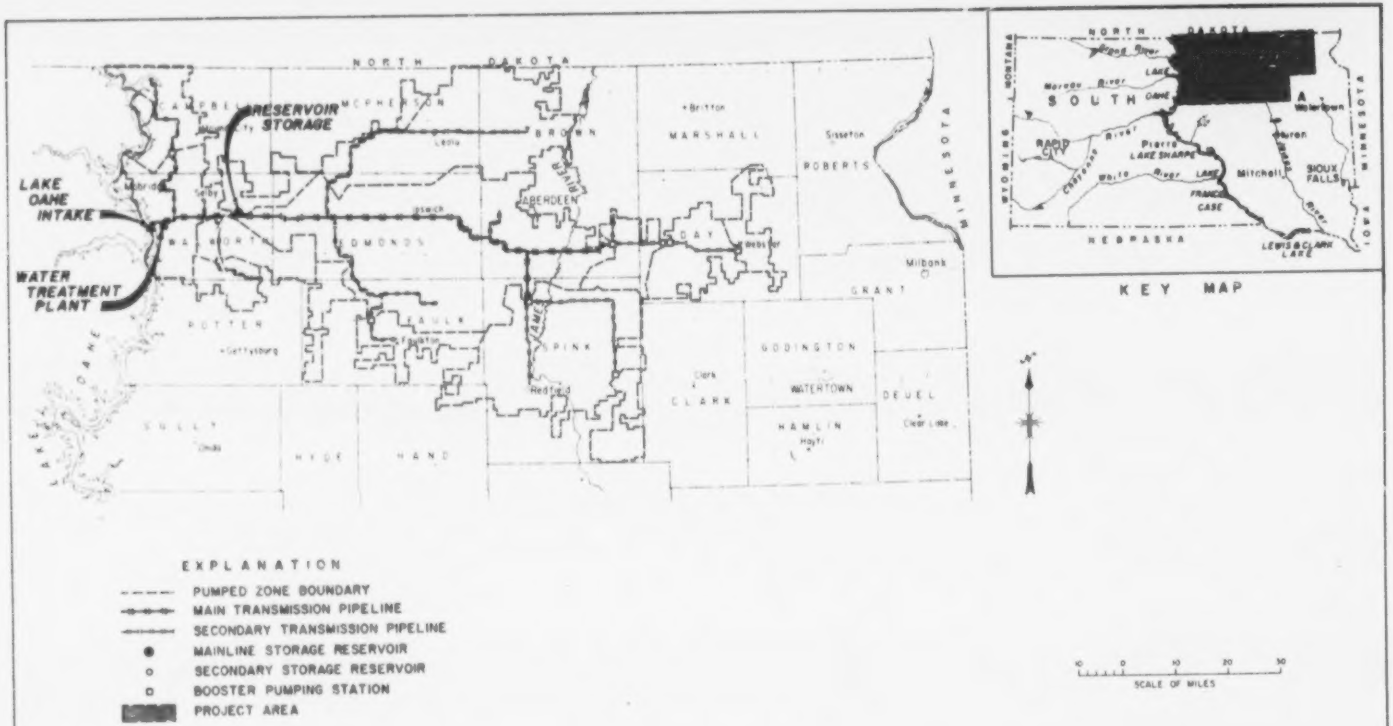
PF-40 (10-78)
Bureau of Reclamation

PICK-SLOAN MISSOURI BASIN PROGRAM, BELLE FOURCHE UNIT, SOUTH DAKOTA

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Completed Work	$ 7,354,364	$ 7,354,364	$ ---	$ ---	$ ---
Construction Program					
Belle Fourche Diversion Dam	4,570,000	---	10,000	260,000	4,300,000
Inlet Canal	2,550,000	---	---	---	2,550,000
North Canal	9,600,000	50,000	65,000	900,000	8,585,000
South Canal	9,730,000	50,000	40,000	805,000	8,835,000
Laterals	20,985,000	165,599	397,331	1,935,000	18,487,070
General Property	650,000	---	21,000	---	629,000
Fish and Wildlife	330,000	---	10,000	---	320,000
Service Facilities Depreciation and Salvage	---	6,836	---	---	-6,836
Engineering and Design	(3,475,000)	(237,000)	(324,000)	(509,000)	(2,405,000)
Supervision and Administration	(2,317,318)	(158,599)	(215,649)	(339,000)	(1,604,070)
Construction Costs	55,769,364	7,626,799	$ 543,331	3,900,000	$43,699,234
Other Project Costs	130,000	130,000	---	---	---
Total Program Cost	$ 55,899,364	$ 7,756,799	$ 543,331	3,900,000	$43,699,234
Consolidated Expenditures and Credits	- 7,484,364	- 7,483,270	---	---	-1,094
Total Expenditures	$ 48,415,000	$ 273,529	$ 543,331	3,900,000	$43,698,140
Undelivered Orders	---	6,331	-6,331	---	---
Total Obligations	$ 48,415,000	$ 279,860	$ 537,000	3,900,000	$43,698,140
Method of Financing:					
Appropriation available and required	$ 48,415,000	$ 279,860	---	3,900,000	$43,698,140
Application of prior year funds	---	---	537,000	---	---

GPO 831-380


NORTH DAKOTA
CAMPBELL
RESERVOIR STORAGE
McPHERSON
BROWN
MARSHALL
Britton
Sisseton
ROBERTS
MINNESOTA
Leola
Mobridge
Selby
LAKE OAHE INTAKE
WATER TREATMENT PLANT
WALWORTH
EDMONDS
Ipswich
ABERDEEN
JAMES RIVER
DAY
Webster
Milbank
GRANT
POTTER
Gettysburg
FAULK
Faulkton
SPINK
Redfield
CODINGTON
WATERTOWN
Clark
CLARK
DEUEL
Clear Lake
HAMLIN
Hayti
SULLY
Onida
HYDE
HAND
LAKE OAHE
NORTH DAKOTA
MONTANA
WYOMING
Grand River
Moreau River
LAKE OAHE
SOUTH DAKOTA
Watertown
RAPID CITY
Cheyenne River
Pierre
LAKE SHARPE
Huron
James River
Mitchell
SIOUX FALLS
White River
LAKE FRANCIS CASE
Big Sioux River
NEBRASKA
LEWIS & CLARK LAKE
MINNESOTA
IOWA
KEY MAP
N
EXPLANATION
PUMPED ZONE BOUNDARY
MAIN TRANSMISSION PIPELINE
SECONDARY TRANSMISSION PIPELINE
MAINLINE STORAGE RESERVOIR
SECONDARY STORAGE RESERVOIR
BOOSTER PUMPING STATION
PROJECT AREA
10
0
10
20
30
SCALE OF MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MISSOURI BASIN REGION

PICK-SLOAN MISSOURI BASIN PROGRAM

W. E. B. RURAL WATER
DEVELOPMENT PROJECT

SOUTH DAKOTA

JANUARY [illegible]

REGION
Missouri Basin

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE WEB RURAL WATER DEVELOPMENT PROJECT, SOUTH DAKOTA	Completion Date 1989 1/	% Complete 34	Date 1/31/86

AUTHORIZATION
Public Law 97-273 dated September 30, 1982

LAND CERTIFICATION
None required

DEFINITE PLAN REPORT
None required

BENEFIT COST RATIOS

Based on Direct Benefits	Based on Total Benefits	Date
2/	2/	10/1/85

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	8/	$85,741,000
Net Property and Other Transfers:		
Federal Participation		
Non-Federal Participation	3/	4,317,000
Adjustment	4/	1,350,000
Total to be Allocated		$91,408,000

Allotments to September 30,	1985	$28,579,751
Allotments for FY 1986 a/		16,925,000
Allotments to Date		45,504,751
Allotments Required for FY	1987	21,480,000
Balance to Complete after FY	1987	$18,756,249

ALLOCATIONS 5/

Irrigation	---
Power	---
M & I Water	$ 91,408,000
Recreation	---
F & WL	---
Flood Control	
Other	---
Total	$91,408,000

REPAYMENT

Amount Repaid by Irrigators		---
Amount Repaid by Power		---
Amount Repaid by M & I Water	6/	22,271,000
Nonreimbursable	7/	69,137,000
Total		$91,408,000

AMOUNTS PER ACRE

Irrig. Invest. per Acre
Repayment of Investment per Acre:
By Irrigators
By Power Revenues
By M & I Water Users

Payment Capacity per Acre
Annual Charges:
O & M
Construction
Total

STATUS OF REPAYMENT CONTRACT: Grant agreement with WEB Water Development Association was effective January 6, 1983. This agreement makes available to WEB Association the initial Federal grant for preconstruction activities. A master grant and repayment contract with the WEB Association for remainder of the project was executed on September 29, 1983.

STATUS OF NEPA COMPLIANCE: Project-wide Finding of No Significant Impact (FONSI UM-82-4) was signed September 24, 1982.

DESCRIPTION: The WEB Rural Water Development Project will supply water from Lake Oahe for domestic use to the rural residents and towns in a service area covering over 5,200 square miles in north-central South Dakota. The project will serve portions of 10 counties including Brown, Campbell, Day, Edmunds, Faulk, Hand, McPherson, Potter, Spink, and Walworth. The service area boundaries were determined from the showing of interest provided by good intention fee payments. Fifty-seven towns with a population of 17,124 (1980 census) made preliminary requests for service. Forty-four towns with a population of 12,675 are currently signed up to receive service. A total of 3,700 rural South Dakota households paid good intention fees which represent 85 percent of the potential open county water users in the service area. Provision has also been made to serve 170 rural households in North Dakota. These rural households have an estimated total population of 10,600. In addition, the project will provide livestock water use equivalent to 532,000 head of livestock.

PROJECT DATA SHEET - 2
WEB Rural Water Development Project, South Dakota

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1981; however, the authorization for this appropriation (Rural Development and Policy Act of 1980) contained two provisos. One provided that "such authorization for appropriations shall not become effective until such time as legislation has been enacted deauthorizing the Oahe Unit." The second provided that if deauthorization of the Oahe Unit "has not been enacted by September 30, 1981, the authorization for appropriations provided for in this subsection shall terminate." Because the Oahe Unit was not deauthorized by September 30, 1981, the availability of the appropriation terminated. Public Law 97-273 dated September 30, 1982, reauthorized the project, authorized the Secretary of the Interior to proceed with development of the project and directed that any funds appropriated for the project in FY 1981 be made available for immediate obligation. Financing of the project will consist of grant and loan funds. The Office of the Solicitor, Department of the Interior, determined that a grant to the WEB Rural Water Development Association may exceed 75 percent of planning and development costs and that an interest rate of 5 percent per year be established for the loan funds. Interest during construction will not apply to the grant portion of the project cost.

Footnotes:

1/ Project completion has changed from FY 1990, as shown in the FY 1986 Budget Justifications, to FY 1989 due to additional funds being reprogramed to the project in FY 1985.

2/ Not required by Farmers Home Administration guidelines which are being followed per the authorizing act. Project planning is being performed by the WEB Water Development Association.

3/ Includes $4,317,000 contribution from local funding sources. Cash payments will be made to the WEB Association, not to the Bureau of Reclamation.

4/ Includes $1,350,000 for interest during construction.

5/ Explanation of changes in allocations from the FY 1986 Budget Justifications:

Allocation	FY 1986 Estimate	FY 1987 Estimate
Municipal and Industrial Water	$ 91,408,000	$90,058,000

Explanation	Amount of Change
Decrease due to inclusion of interest during construction in the total to be allocated	-$1,350,000

PROJECT DATA SHEET - 3

WEB Rural Water Development Project, South Dakota

Footnotes: (continued)

6/ The scheduled amount to be repaid is covered by a contract with project beneficiaries. This is the repayment capability and is noted in the repayment contract as the repayment ceiling.

7/ According to authorizing legislation, Public Law 97-273, grants will be not less than 75 percent of eligible development costs.

8/ Appropriations authorized are $99,200,000 (October 1986). This authorization is adequate to over this project as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $727,775, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

WEB RURAL WATER DEVELOPMENT PROJECT, SOUTH DAKOTA

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Lake Oahe Intake

Type - Vertical caisson 24 feet diameter, 105 feet deep
Inlet - Cylindrical, screened
Intake Pipe - 36 inches diameter, 405 feet long
Water Level - Varies from elevation 1540 to 1620 feet above sea level

Water Treatment Plant

Type - Rapid mix, flocculation, clarification, and filtration
Capacity - 7 million gallons per day

Main Pumping Stations

At Intake:	Capacity:
Six Units - 1,200 total hp	4,860 gallons per minute
At Treatment Plant:	Capacity:
Four Units - 800 total hp	4,860 gallons per minute

Main Transmission Line

Length - 116 miles
Pipe Size - 14 to 27 inches diameter

Main Storage Reservoir

Total Storage Capacity - 5 million gallons
Type - Concrete

Secondary Transmission System

Length - 307 miles
Pipe Size - 4 to 14 inches diameter

WEB RURAL WATER DEVELOPMENT PROJECT, SOUTH DAKOTA

PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM: (continued)

Distribution System

Length - 3,094 miles
Pipe Size - 1-1/2- to 5-inch diameter
Storage Reservoirs - 16 (size to be determined by subsequent investigation)
Pump Stations - 14 (size to be determined by subsequent investigation)

Town System Improvements:

Water and distribution systems to be provided for 14 towns.
Water to be furnished for distribution through existing distribution systems to 30 towns.

Land and Rights:

Quantity - To be acquired as needed (much of easement will be donated or incorporated within highway or utility easements)
Total Estimated Cost - $250,000 (to be refined as investigations progress)
Cost Per Acre - To be determined at the time of acquisition

Appropriation Title: Construction Program

WEB RURAL WATER DEVELOPMENT PROJECT, SOUTH DAKOTA

FISCAL YEAR 1987

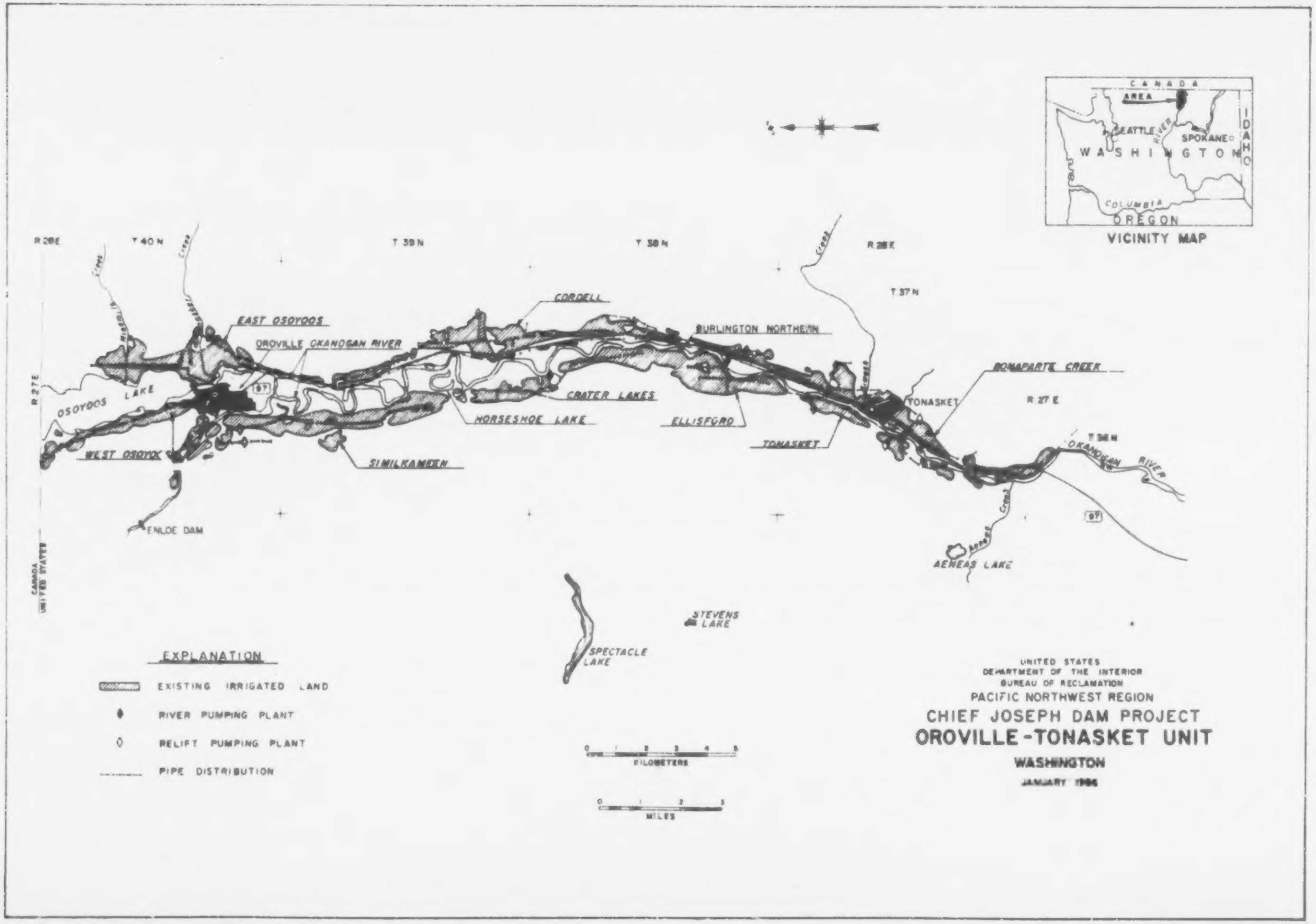
Work Proposed	Program
Administration Costs. - Provides for Bureau of Reclamation administration such as review of designs and construction liaison.	$ 125,000
WEB Rural Water Project Construction. - Construction of project features will continue.	22,155,000
Non-Federal Participation.	-800,000
TOTAL	$21,480,000

WEB RURAL WATER DEVELOPMENT PROJECT, SOUTH DAKOTA

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Administration Costs (Including Interest During Construction).	$ 2,100,000	$ 391,609	$ 400,000	$ 125,000	$ 1,183,391
WEB Rural Water Project Construction	89,308,000	29,617,994	19,220,000	22,155,000	18,315,006
Construction Costs	$ 91,408,000	$30,009,603	$19,620,000	$22,280,000	$19,498,397
Total Program Cost	$ 91,408,000	$30,009,603	$19,620,000	$22,280,000	$19,498,397
Non-Federal Participation	-4,317,000	-1,233,000	-800,000	-800,000	-1,484,000
Consolidated Expenditures and Credits	-1,350,000	-222,991	-268,861	--	-858,148
Total Expenditures	$ 85,741,000	$28,553,612	$18,551,139	$21,480,000	$17,156,249
Undelivered Orders	---	6,139	-6,139	---	---
Total Obligations (Reclamation)	$ 85,741,000	$28,559,751	$18,545,000	$21,480,000	$17,156,249
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$16,925,000	$21,480,000	$17,156,249
Application of prior year funds	---	---	20,000	---	---
Underfinancing	---	---	1,600,000	---	---
Non-Federal Participation Cash.	---	---	(800,000)	(800,000)	(1,484,000)


CANADA
AREA
SEATTLE
RIVER
SPOKANE
WASHINGTON
IDAHO
COLUMBIA
OREGON
VICINITY MAP
R 28 E
T 40 N
T 39 N
T 38 N
R 28 E
T 37 N
R 27 E
T 36 N
R 27 E
Creek
EAST OSOYOOS
OROVILLE OKANOGAN RIVER
CORDELL
BURLINGTON NORTHERN
BONAPARTE CREEK
TONASKET
OSOYOOS LAKE
97
CRATER LAKES
HORSESHOE LAKE
ELLISFORD
TONASKET
WEST OSOYOOS
SIMILKAMEEN
OKANOGAN RIVER
ENLOE DAM
AENEAS LAKE
CANADA
UNITED STATES
STEVENS LAKE
SPECTACLE LAKE
0 1 2 3 4 5
KILOMETERS
0 1 2 3
MILES

EXPLANATION

▨ EXISTING IRRIGATED LAND

◆ RIVER PUMPING PLANT

◇ RELIFT PUMPING PLANT

— PIPE DISTRIBUTION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
CHIEF JOSEPH DAM PROJECT
OROVILLE-TONASKET UNIT
WASHINGTON
JANUARY 1986

REGION:

Pacific Northwest

PROJECT DATA SHEET

PROJECT AND STATE:	Completion Date:	% Complete	Date
CHIEF JOSEPH DAM PROJECT, OROVILLE-TONASKET UNIT, WASHINGTON	1987 1/	72	1/31/86

		BENEFIT COST RATIOS		
AUTHORIZATION:		Based on Direct:	Based on Total:	
Public Law 94-423, September 28, 1976		Benefits	Benefits	Date
LAND CERTIFICATION:	DEFINITE PLAN REPORT:			
December 11, 1979	Approved May 15, 1980	1.8 2/	2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 13/	$78,000,000	Allotments to September 30, 1985	$	60,366,448
Total Federal Obligations (Other)		Allotments for FY 1986 a/		6,525,000
Net Property and Other Transfers:				
Federal Participation	700,000			
Non-Federal Participation		Allotments to Date	$	66,891,448
Adjustment 3/	1,030,000	Allotments Required for FY 1987		1,725,000
Total to be Allocated	$79,730,000	Balance to Complete after FY 1987	$	9,383,552

ALLOCATIONS 4/		REPAYMENT		AMOUNTS PER ACRE			
Irrigation	$75,840,000	Amount Repaid by:		Irrig. Invest/Acre	$7,584	Payment Capacity per	
Power		Irrigators 6/7/8/	$11,825,000	Repayment of Invest-		Acre 12/	$63.00
M&I Water		Power 9/	63,551,000	ment per Acre:		Annual Charges:	
Recreation		M&I Water		By Irrigators	1,182	O&M	57.70
F&WL	3,300,000	Amount Deferred under		By Power Revenues	6,356	C&R 12/	21.21
Flood Control		Leavitt Act 10/	464,000	Indian Irrigation			
Navigation				(Deferred)	46		
State-County							
Other 5/	590,000	Nonreimbursable 11/	3,890,000			TOTAL	$78.91
Total	$79,730,000		$79,730,000				

STATUS OF REPAYMENT CONTRACT: Repayment contract with Oroville-Tonasket Irrigation District executed November 28, 1979, validated January 8, 1980.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental impact statement was filed with Council on Environmental Quality on December 14, 1976.

DESCRIPTION: The project is located in north-central Washington between the towns of Oroville and Tonasket. The project is essentially a rescue operation of the 9,320 acres of orchard lands in the Oroville-Tonasket Irrigation District. The project will also provide irrigation service to 680 acres of other lands. Of the total 10,000 acres to be irrigated, 61 acres are Indian Trust lands. Project lands are devoted almost entirely to apple production and will continue to be after project development. The plan provides for replacing the existing gravity system with a pressure pipeline system. The major features are six pumping plants, approximately 93 miles of pipeline, and fish and wildlife facilities.

PROJECT DATA SHEET - 2
Chief Joseph Dam Project
Oroville-Tonasket Unit, Washington

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1978, and funds to initiate construction were appropriated in FY 1979.

Footnotes:

1/ Water delivery is scheduled to the final 3,956 acres in April 1987. Completion of the fish enhancement facilities is now scheduled after 1991 pending decisions by affected agencies on the best method to achieve the project benefits.

2/ Changed from the 1.9 direct benefits as presented in the FY 1986 Budget Justifications. The decrease reflects an increase in project costs due to modifications required for removal of excess sediment entering the system and a slight decrease in project benefits. Under present project evaluation guidelines, only direct benefits are identified. The ratio was computed by using the authorized interest rate of 5-7/8 percent.

3/ Irrigation power suballocation.

4/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$73,840,000	$75,840,000
Fish and Wildlife	3,300,000	3,300,000
Other	590,000	590,000
Total	$77,730,000	$79,730,000

Explanation	Amount of Change
The increase in irrigation is due to modifications and additions to remove excess sediment that is entering the system and causing excessive wear and operating problems	$+2,000,000

5/ Consists of nonreimbursable preauthorization investigation costs of $520,000 and cultural resource activities, $70,000.

6/ Includes irrigation power suballocation of $1,030,000 which will be included as part of the annual pumping power charges paid by the water users.

PROJECT DATA SHEET - 3
Chief Joseph Dam Project
Oroville-Tonasket Unit, Washington

Footnotes: (continued)

7/ The scheduled amount to be repaid is covered by an existing contract with the project beneficiaries.

8/ Composition of project acreage is as follows: 9,773 acres full paying, 166 acres of nonpaying Class 6W lands, and 61 acres of Indian Trust lands for which repayment is deferred.

9/ Amounts to be repaid are within the limitations established by section 6 of Public Law 89-561 regarding financial assistance to Pacific Northwest reclamation projects from net revenues of Federal Columbia River Power Systems.

10/ Amount of costs allocated to Indian irrigation. The Leavitt Act permits repayment to be deferred as long as the land is in Indian ownership.

11/ Consists of $520,000 for preauthorization investigation costs, $70,000 for cultural resource activities, and $3,300,000 for nonreimbursable fish enhancement costs.

12/ Payment capacity has been adjusted to reflect the Oroville-Tonasket Irrigation District's current obligation under the December 26, 1964 repayment contract with the Bureau of Reclamation. Excludes irrigation power suballocation repayment as those costs are included in pumping power costs and become a part of the annual operation and maintenance charges. Payment capacity was determined in 1979 prior to execution of the repayment contract. Indications are that adequate payment capacity exists to cover increasing operation and maintenance costs, as well as the construction obligation.

13/ Appropriations authorized are $70,855,000 (October 1986). The comparable Federal obligation is $78,000,000 which exceeds the appropriation ceiling by more than 5 percent but the difference is less than the amount for contingencies included in the obligation. Appropriate Congressional committees have been advised of the appropriation ceiling status for this project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the appropriation ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $302,075, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimates to complete this project have not been adjusted in the FY 1987 Budget Justifications.

CHIEF JOSEPH DAM PROJECT
Oroville-Tonasket Unit, Washington

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Pumping Plants and Pipe Distribution Systems:

Pumping Plants:	Units	Capacity (cubic feet per second)
Osoyoos Pumping Plant	10	84 1/
Cordell Pumping Plant	6	33
Crater Lakes Pumping Plant	4	20
Ellisford Pumping Plant	6	31
Tonasket Pumping Plant	5	25
Bonaparte Creek Pumping Plant	5	23

Pipe Distribution Systems:	Length (miles) 1/	Diameter (inches)	Irrigation (acres)
Osoyoos	35	51-4	3,956
Cordell	15	36-4	1,393
Crater Lakes	6	24-4	898
Ellisford	15	24-4	1,556
Tonasket	12	30-4	1,135
Bonaparte Creek	10	24-4	1,062

Land and Rights:

Quantity - 757 acres
Total Estimated Cost - $1,704,000
Cost Per Acre - $2,251
Acquisition - 63 percent complete as of September 30, 1985

1/ Changes from FY 1986 Budget Justifications are due to final design quantities.

Appropriation Title: Construction Program
Construction and Rehabilitation

CHIEF JOSEPH DAM PROJECT
Oroville-Tonasket Unit, Washington - 5

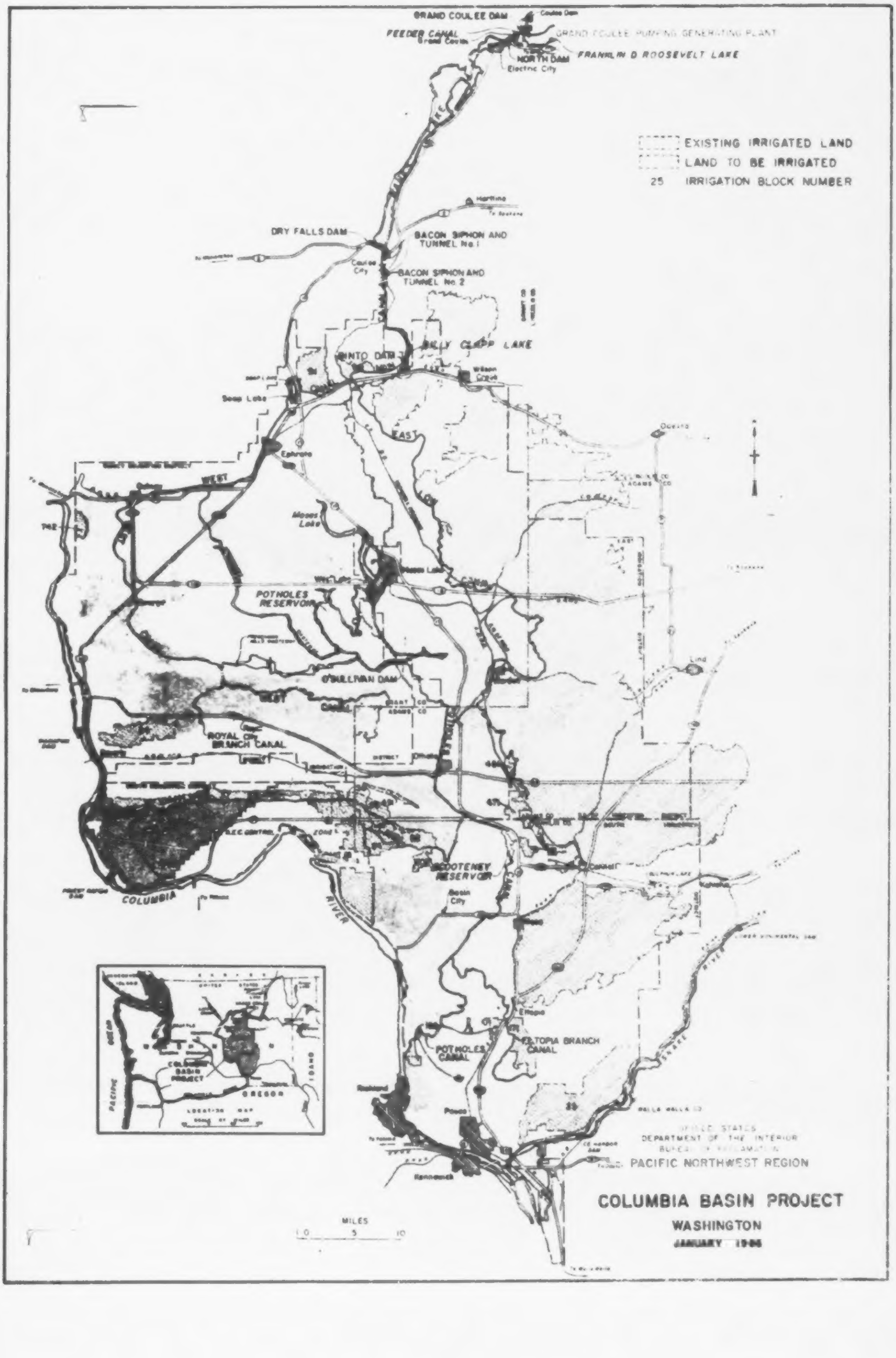
FISCAL YEAR 1987

Work Proposed	Program
Osoyoos Distribution System. - Construction work and land acquisition will be completed on the pumping plant and pipe distribution system.	$1,287,000
Removal of Existing Irrigation Facilities. - Work will continue on removal of wooden flume system.	90,000
Fish and Wildlife Facilities. - Development and fencing of the wildlife mitigation areas will be completed. Construction of the steelhead enhancement facility will continue.	348,000
TOTAL	$1,725,000

Chief Joseph Dam Project, Oroville-Tonasket Unit

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Osoyoos Pump Distribution System	$28,592,000	$16,147,000	$9,880,000	$1,287,000	$1,278,000
Cordell Pump Distribution System	10,921,000	9,741,000	100,000	---	1,080,000
Crater Lakes Pump Distribution System	7,821,000	6,601,000	100,000	---	1,120,000
Ellisford Pump Distribution System	9,289,000	7,789,000	150,000	---	1,350,000
Tonasket Pump Distribution System	7,848,000	7,298,000	100,000	---	450,000
Bonaparte Creek Pump Distribution System	8,584,000	7,114,000	160,000	---	1,310,000
Removal of Existing Irrigation Facilities	390,000	70,000	40,000	90,000	190,000
Drains	405,000	36,000	---	---	369,000
Fish and Wildlife Facilities	4,260,000	735,000	808,000	348,000	2,369,000
Service Facilities, Depreciation and Salvage	0	332,000	---	---	(332,000)
Engineering and Design	[9,135,000]	[8,400,000]	[500,000]	[100,000]	[135,000]
Supervision and Administration	[13,332,000]	[10,613,000]	[1,697,000]	[809,000]	[213,000]
Total Construction Cost	$78,110,000	$55,863,000	$11,338,000	$1,725,000	$9,184,000
Other Project Cost	590,000	551,000	39,000	---	---
Total Project Cost	$78,700,000	$56,414,000	$11,377,000	$1,725,000	$9,184,000
Consolidated Expenditures and Credits	(700,000)	(700,097)	545	---	(448)
Total Expenditures	$78,000,000	$55,713,903	$11,377,545	$1,725,000	$9,183,552
Undelivered Orders	---	4,652,545	(4,652,545)	---	---
Total Obligations (Reclamation)	$78,000,000	$60,366,448	$6,725,000	$1,725,000	$9,183,552


GRAND COULEE DAM
Coulee Dam
FEEDER CANAL
Grand Coulee
GRAND COULEE PUMPING GENERATING PLANT
NORTH DAM
Electric City
FRANKLIN D ROOSEVELT LAKE
EXISTING IRRIGATED LAND
LAND TO BE IRRIGATED
25 IRRIGATION BLOCK NUMBER
Hartline
To Spokane
DRY FALLS DAM
BACON SIPHON AND TUNNEL No.1
Coulee City
BACON SIPHON AND TUNNEL No.2
BILLY CLAPP LAKE
PINTO DAM
Wilson Creek
Soap Lake
Ephrata
EAST
WEST
Odessa
Moses Lake
POTHOLES RESERVOIR
O'SULLIVAN DAM
ROYAL CITY BRANCH CANAL
Lind
KOOTENEY RESERVOIR
Basin City
COLUMBIA
RIVER
Eltopia
ELTOPIA BRANCH CANAL
POTHOLES CANAL
Richland
Pasco
Kennewick
SNAKE
WALLA WALLA CO
PACIFIC OCEAN
COLUMBIA BASIN PROJECT
OREGON
IDAHO
LOCATION MAP
MILES
0 5 10
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
COLUMBIA BASIN PROJECT
WASHINGTON
JANUARY 1946

Chief Joseph Dam Project, Oroville-Tonasket Unit

PF-40

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Method of Financing:					
Appropriation Available and Required.........	---	---	$6,525,000	$1,725,000	$9,383,552
Application of Prior Year Funds..............	---	---	---	---	---
Underfinancing...............................	---	---	200,000	---	---

REGION:
Pacific Northwest

PROJECT DATA SHEET

PROJECT AND STATE:
COLUMBIA BASIN PROJECT, WASHINGTON

Completion Date:	% Complete	Date
1/	74	1/31/86

AUTHORIZATION: Public Law 409, August 30, 1935, and subsequent acts.
(Third Powerplant - Public law 89-448, June 14, 1966)

LAND CERTIFICATION:
August 11, 1952 and April 7, 1976:

DEFINITE PLAN REPORT:
3/

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
5.5 2/	5.7 2/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 13/	$3,965,826,000	Allotments to September 30, 1985	$1,575,055,586
Total Federal Obligations(Other)		Allotments for FY 1986 a/	18,634,000
Net Property and Other Transfers:			
Federal Participation	5,551,000		
Non-Federal Participation	15,362,000	Allotments to Date	$1,593,689,586
Adjustment 4/	47,221,000	Allotments Required for FY 1987	31,000,000
Total to be Allocated	$4,033,960,000	Balance to Complete after FY 1987	$2,341,136,414

ALLOCATIONS 5/	
Irrigation	$2,921,260,000
Power	1,035,306,000
M&I Water	
Recreation	
F&WL	25,614,000
Flood Control	46,692,000
Navigation	1,000,000
State-County	
Other 6/	4,088,000
Total	$4,033,960,000

REPAYMENT	
Amount Repaid by:	
Irrigators 7/8/	$1,028,982,000
Power 9/	2,895,035,000
M&I Water	
Settlement Land Sales	11,500,000
Non-Federal Contributions 10/	15,259,000
Deferred under Leavitt Act 11/	5,790,000
Nonreimbursable 12/	77,394,000
	$4,033,960,000

AMOUNTS PER ACRE	
Irrig. Invest/Acre	$2,668
Repayment of Investment per Acre:	
By Irrigators 7/	940
By Power Revenues 7/	1,698
Indian Irrig.(Def.)	5
From Settlement Land Sales	11
Non-Federal Contrib.	14

Payment Capacity per Acre-Foot: 7/	
Annual Charges:	
O&M	$20.20
Construction	18.80
Total	$39.00

STATUS OF REPAYMENT CONTRACT: Amendatory repayment contracts were executed on December 18, 1968, by the three Columbia Basin irrigation districts. Master water service contracts with the East and Quincy Columbia Basin Irrigation Districts for Bacon Siphon and Tunnel No. 2 water were executed on August 27, 1976; supplemental repayment contracts are scheduled to be executed in September 1987.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality, February 27, 1976. Statement for the Esquatzel Coulee - Final filed August 18, 1977. Block 26 Laterals - Finding of No Significant Impact approved June 1, 1981. Statement for completion of the project scheduled to Environmental Protection Agency - Draft September, 1986; Final June 1987.

PROJECT DATA SHEET - 2
Columbia Basin Project, Washington

DESCRIPTION: The project is located in central Washington, approximately 95 miles west of Spokane, Washington. Project features are located in Okanogan, Douglas, Grant, Franklin, Adams, Walla Walla, Stevens, Ferry, and Lincoln Counties. This is a multipurpose project that provides a power supply of 6,480,000 kilowatts and a full water supply for the irrigation of 1,095,000 acres. The project also provides flood control, fish and wildlife, and navigation benefits. Wheat, alfalfa hay, field corn, potatoes, dry beans, pea seed, barley, processing corn, silage, vegetables and fruit, and pasture are the major crops presently being grown. These crops will continue to be of great importance when the project is mature.

OTHER INFORMATION: Funds to initiate construction of Grand Coulee Dam and appurtenant works were appropriated in FY 1934 (National Industrial Recovery Act Funds) and the Third Powerplant in FY 1967. Irrigation facilities for approximately one-half the project and the Right and Left Powerplants at Grand Coulee have been completed and are in service. Generating Units 19 through 24 of the Third Poweplant are in service, and construction on the riverbank stabilization is underway.

Footnotes:

1/ Irrigation Facilities - Drains are constructed as the need arises and are scheduled to continue for several years. Further irrigation development is dependent upon the negotiation of revised repayment contracts and cost sharing agreements.

2/ No change from 5.5 direct benefit/cost ratio and a slight change from the 5.6 total benefit cost ratio which due to an error in the FY 1986 Budget Justifications were shown as 5.6 direct and 5.5 total benefit cost ratios. The slight change in the total benefit cost ratio was due to slightly reduced cost due to reestimation of cost for completion of the project irrigation facilities. The ratios were computed using the authorized interest rate of 3 percent for irrigation Facilities and 3-1/8 percent for the Third Powerplant.

3/ Summary planning report for the previously authorized project facilities was submitted in March 1953 and adopted by the Commissioner in lieu of a Definite Plan Report. The Definite Plan Report for the Third Powerplant was approved March 18, 1968.

4/ Adjustments include operation and maintenance financed additions and improvements to power and multipurpose facilities, credits for sale of property under the Coulee Dam Community Act of 1957, and minor adjustments, all of which total $5,834,000 plus interest during construction of $41,387,000.

PROJECT DATA SHEET - 3
Columbia Basin Project, Washington

Footnotes: (continued)

5/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$3,169,234,000	$2,921,260,000
Power	1,025,487,000	1,035,306,000
Fish and Wildlife	23,304,000	25,614,000
Flood Control	46,692,000	46,692,000
Navigation	1,000,000	1,000,000
Other	4,368,000	4,088,000
Total	$4,270,085,000	$4,033,960,000

Explanation	Amount of Change
Changes in quantities or estimates:	
Decrease in irrigation due to revised estimate of cost for future irrigation facilities and slight decrease in cost of P/G Units 7-12 allocated to irrgation. . .	$-247,974,000
Increase in power due to completion work on Third Powerplant partially offset by a slight decrease in P/G Units 7-12 allocated to power	+ 9,819,000
Increase in fish and wildlife costs due to revised estimate of costs for future facilities	+ 2,310,000
Decrease in other due to reduction in costs of cultural resource activities on Third Powerplant	- 280,000
Total	$-236,125,000

6/ Includes nonreimbursable expenditures of $177,000 for spillway flood lighting - Grand Coulee Dam (July 2, 1956, 70 Stat. 474,476), and $3,911,000 for cultural resource activities (Public Law 93-291).

Footnotes: (continued)

7/ Existing repayment contracts provide for repayment of $2.63 per acre per year over a 50-year period for all lands within the project. Future repayment contracts for approximately 540,000 acres will require additional payment based on current repayment ability.

8/ The scheduled amount to be repaid on completed facilities is covered by existing contracts with project beneficiaries. Repayment contracts to cover payment capacity and increased repayment on future additions will be executed prior to initiation of construction on those facilities.

9/ Power which is excess to project needs is delivered to and marketed by the Bonneville Power Administration as provided in Executive Order 8526 dated August 26, 1940. Power for project use will be repaid under existing and future water user repayment contracts. Repayment assistance, for the irrigation allocation which is in excess of the water users repayment ability, is within the limitations established by section 6 of Public Law 89-561 regarding financial assistance to Pacific Northwest Federal Reclamation projects from net revenues of Federal Columbia River power system.

10/ Includes $15,000,000 contribution by the State of Washington to assist in construction of Bacon Siphon and Tunnel No. 2; $313,440 contributed by the State of Washington to assist in the construction of Grand Coulee Dam, and $48,560 in miscellaneous contributions, less $103,000 non-Federal contribution allocation to flood control included in the total under footnote 12.

11/ Amount of cost allocated to Indian irrigation. The Leavitt Act permits repayment to be deferred as long as the land is in Indian ownership.

12/ Includes flood control, $46,692,000; navigation, $1,000,000; spillway flood lighting, $177,000; and nonreimbursable fish and wildlife, $25,614,000; and cultural resource activities (Public Law 93-291), $3,911,000.

13/ Appropriation authorization covers Third Powerplant only. Refer to Third Powerplant project data sheet for discussion on this point.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $689,247, including both Irrigation Facilities and Third Powerplant reductions, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

COLUMBIA BASIN PROJECT, WASHINGTON

PHYSICAL DATA ON STRUCTURES - 5

COMPLETED WORK:

Grand Coulee Dam (Including Third Powerplant Forebay Dam): (Franklin D. Roosevelt Lake)

Dam:
Type - Concrete gravity
Structural Height - 550 feet
Crest Length - 5,223 feet

Spillway:
Type - Gated
Design Discharge - 1,000,000 cubic feet per second

Reservoir capacity:
Total Storage - 9,562,000 acre-feet

North Dam: (Banks Lake)

Dam:
Type - Zoned earthfill
Structural Height - 145 feet
Crest Length - 1,450 feet

Spillway:
(None) Water for reservoir provided from Franklin D. Roosevelt Lake by pumping

Reservoir capacity:
Total Storage - 1,275,000 acre-feet

Dry Falls Dam: (Banks Lake)

Dam:
Type - Zoned earthfill
Structural Height - 123 feet
Crest Length - 9,800 feet

Spillway:
(None) Water for reservoir provided from Franklin D. Roosevelt Lake by pumping

Reservoir capacity:
See North Dam above as the reservoir is common to both

O'Sullivan Dam: (Potholes Reservoir)

Dam:
Type - Zoned earthfill
Structural Height - 200 feet
Crest Length - 19,000 feet

Spillway:
Type - Gated
Design Discharge - 29,600 cubic feet per second

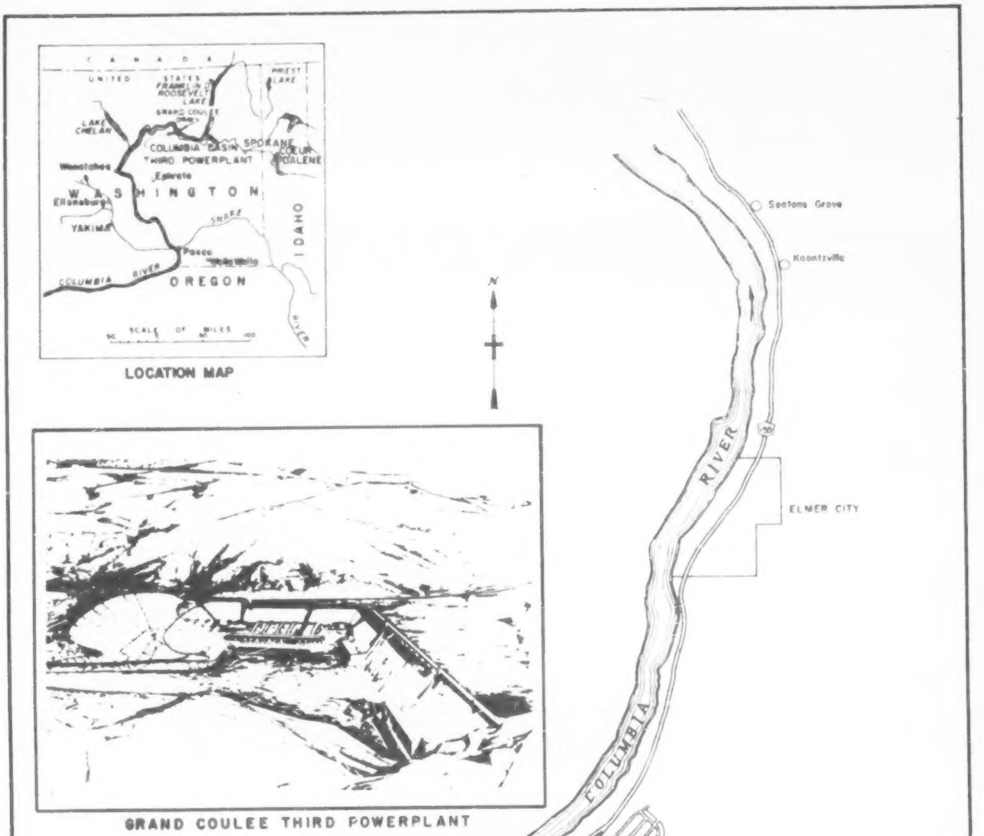
Reservoir capacity:
Total Storage - 511,700 acre-feet

Pinto Dam: (Billy Clapp Reservoir)

Dam:
Type - Zoned earthfill
Structural Height - 130 feet
Crest Length - 1,900 feet

Spillway:
Type - Uncontrolled
Design Discharge - 11,900 cubic feet per second

Reservoir capacity:
Total Storage - 64,200 acre-feet


CANADA
UNITED STATES
FRANKLIN D. ROOSEVELT LAKE
PRIEST LAKE
GRAND COULEE DAM
LAKE CHELAN
COLUMBIA BASIN THIRD POWERPLANT
SPOKANE
COEUR D'ALENE
Wenatchee
Ephrata
WASHINGTON
Ellensburg
YAKIMA
SNAKE
IDAHO
Pasco
Walla Walla
COLUMBIA RIVER
OREGON
RIVER
SCALE OF MILES
50 0 50 100
LOCATION MAP
GRAND COULEE THIRD POWERPLANT
N
Seatons Grove
Koontzville
155
ELMER CITY
COLUMBIA RIVER
COULEE DAM
VISITOR FACILITIES
THIRD POWERPLANT SWITCHYARD
LEFT & RIGHT POWERPLANTS MODIFICATIONS
THIRD POWERPLANT
FOREBAY DAM
FOREBAY
LEFT SWITCHYARD MODIFICATIONS
GRAND COULEE PUMPING PLANT
FEEDER CANAL
FRANKLIN D ROOSEVELT LAKE
155
GRAND COULEE DAM
1000 0 1000 2000 4000
SCALE OF FEET
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
COLUMBIA BASIN PROJECT
GRAND COULEE THIRD POWERPLANT
WASHINGTON
JANUARY 1966

COLUMBIA BASIN PROJECT, WASHINGTON

PHYSICAL DATA ON STRUCTURES - 6

Grand Coulee Powerplants:

Grand Coulee Powerplant has 18 main units of 125 megawatts and 3 station-service units of 10 megawatts making the total installed capacity 2,280 megawatts. Generating Head - 300 feet.

Switchyards:

Grand Coulee - 3,999,333 kilovolt amperes

Pumping Plants:

Grand Coulee Pump/Generating Plant has a present pumping capacity of 9,040 cubic feet per second utilizing pumping units 1 through 6.

Twenty-two other pumping plants ranging in size from 40 to 460 cubic feet per second.

Main Canal:

Main Canal - 12.9 miles - 20,000 cubic feet per second
Bacon Tunnel No. 1 - 2 miles long - 23.3-foot-diameter horseshoe - 7,250 cubic feet per second
Bacon Siphon No. 1 - 0.2 mile long - 23.3-foot-diameter - 7,250 cubic feet per second
Bacon Tunnel No. 2 - 2 miles long - 28.5-foot-diameter horseshoe - 12,050 cubic feet per second
Bacon Siphon No. 2 - 0.2 mile long - 28-foot-diameter - 12,050 cubic feet per second

Canals:

West Canal - 5,100 cubic feet per second - 96.1 miles
East Low Canal - 4,500 cubic feet per second - 86.8 miles
Potholes Canal - 3,900 cubic feet per second - 62.4 miles
Eltopia Branch Canal - 550 cubic feet per second - 25.0 miles
Wahluke Branch Canal - 2,000 cubic feet per second - 44.0 miles

Lateral Systems:

Various sizes and lengths are in service to 556,808 acres. 1/

1/ The increase in acres from that presented in the 1986 Budget Justifications is due to the completion of Block 26.

Spokane Indian Reservation:

Pipe distribution system to serve 1,700 acres.

CONSTRUCTION PROGRAM

Grand Coulee Pumping/Generating Plant:

Units P/G 7 and 8:

Generating Capacity - 50 megawatts each
Generating Head - 280 feet
Pumping capacity - 1,750 cubic feet per second each

Units P/G 9 through 12:

Generating Capacity - 50 megawatts each
Generating Head - 280 feet
Pumping capacity - 1,750 cubic feet per second each

Distribution System: Various sizes and lengths to provide future service to 533,590 acres.

Third Powerplant:

Three Generating Units - 600 megawatts each
Generating Head - 305 feet
Three Generating Units - 700 megawatts each

Third Powerplant Switchyard:

Rated at 4,608,000 kilovolt amperes

propriation Title: Construction Program
Construction and Rehabilitation

COLUMBIA BASIN PROJECT, WASHINGTON - 8

FISCAL YEAR 1987

Work Proposed	Program
Columbia Basin Irrigation Facilities	
Drainage Construction. - Drainage construction will continue.	4,301,000
Deferred and Supplemental Construction. - Construction will be completed on Wahatis Wasteway. Right-of-way acquisition will continue for the Frenchman Hills Wasteway and Desert Wildlife Recreation Area. Also provides for preconstruction activities on Enlargement of West Canal, Phase 3.	2,084,000
Deferred and Bypassed Lands. - Provides for completion of Environmental Impact Statement and continuation of cost sharing discussions.	240,000
East High Irrigation System. - Provides for completion of Environmental Impact Statement and continuation of cost sharing discussions.	265,000
East Low Extension. - Provides for completion of Environmental Impact Statement and continuation of cost sharing discussions.	80,000
Other Project Cost. - Provides for administration of project-owned settlement land and continued archeological and historical investigative work at proposed construction sites.	140,000
Subtotal - Irrigation Facilities	$7,110,000

FISCAL YEAR 1987

	Program
Work Proposed	
Columbia Basin Third Powerplant	
Third Powerplant. - Work on the downstream riverbank stabilization program, and completion and modification work on the powerplant, including additional fire protection facilities, will continue.	$16,970,000
Third Powerplant Switchyard. - Contracts for replacement and installation of circuit breakers and installation of the 115/230-kV overhead transmission lines will continue.	6,920,000
Subtotal - Third Powerplant	$23,890,000
TOTAL	$31,000,000

Columbia Basin Project, Washington

PF-40

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
COMPLETED WORK 1/	$674,826,000	$674,826,000			
Construction Program					
Columbia Basin Irrigation Facilities					
Current Development					
Grand Coulee Pumping/Generating Plant					
Units P/G 7 and 8	14,767,000	14,428,000	339,000		0
Units P/G 9, 10, 11, and 12	85,006,000	84,778,000	228,000		0
Block 26 Laterals	18,094,000	17,915,000	179,000		0
Fish and Wildlife Facilities	1,416,000	1,228,000	25,000		163,000
Drainage Construction	215,700,000	104,738,000	4,953,000	4,301,000	101,708,000
Deferred and Supplemental Construction	30,091,000	5,369,000	1,574,000	2,084,000	21,064,000
Deferred and Bypassed Lands	210,114,000	1,665,000	150,000	240,000	208,059,000
East High Irrigation System	1,608,920,000	4,984,000	410,000	265,000	1,603,261,000
East Low Extension	348,757,000	420,000	125,000	80,000	348,132,000
Service Facil., Depreciation, and Salvage	(1,344,000)	199,000	210,000	0	(1,753,000)
Other Project Cost	19,942,000	12,369,000	140,000	140,000	7,293,000
Engineering and Design	[282,145,000]	[79,398,000]	[1,847,000]	[1,429,000]	[199,471,000]
Supervision and Administration	[480,373,000]	[126,456,000]	[2,743,000]	[2,565,000]	[348,609,000]
Total Cost - Irrigation Facilities	$3,226,289,000	$922,919,000	$8,333,000	$7,110,000	$2,287,927,000

1/ Grand Coulee Dam - Left and Right PRP's

Columbia Basin Project, Washington

PF-40

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
COMPLETED WORK 2/	$86,314,272	$86,314,272			
Construction Program					
Columbia Basin Third Powerplant					
Third Powerplant	570,161,728	489,378,728	18,958,000	16,970,000	44,855,000
Third Powerplant Switchyard	96,954,000	82,394,000	2,525,000	6,920,000	5,115,000
Visitor Facilities	6,462,000	6,454,000	8,000	---	0
Service Facil., Depreciation and Salvage	---	2,646,171	---	---	(2,646,171)
Other Project Costs	558,000	558,000	---	---	0
Engineering and Design	[71,225,000]	[58,398,000]	[3,916,000]	[3,813,000]	[4,451,000]
Supervision and Administration	[98,359,000]	[80,645,000]	[5,636,000]	[5,487,000]	[6,623,000]
Total Cost - Third Powerplant	$760,450,000	$667,745,171	$21,491,000	$23,890,000	$47,323,829
Total Project Cost	$3,986,739,000	$1,590,664,171	$29,824,000	$31,000,000	$2,335,250,829
Non-Federal Participation	(15,362,000)	(15,362,000)	---	---	---
Consolidated Expenditures and Credits	(5,551,000)	(7,537,074)	489	---	1,985,585
Total Expenditures	$3,965,826,000	$1,567,765,097	$29,824,489	$31,000,000	$2,337,236,414
Undelivered Orders	---	7,043,489	(7,043,489)	---	---
Total Obligations (Reclamation)	$3,965,826,000	$1,574,808,586	$22,781,000	$31,000,000	$2,337,236,414
Method of Financing:					
Appropriation available and required			$18,634,000	$31,000,000	$2,341,136,414
Application of prior year funds			247,000	---	---
Underfinancing			3,900,000	---	---

2/ Forebay Dam, and modification of the Left and Right PRP, and the Left Switchyard.

PROJECT DATA SHEET

REGION:
Pacific Northwest

PROJECT AND STATE:	Completion Date:	% Complete	Date
COLUMBIA BASIN PROJECT, THIRD POWERPLANT, GRAND COULEE DAM, WASHINGTON	1990	95	1/31/86

	BENEFIT COST RATIOS		
	Based on Direct: Benefits	Based on Total: Benefits	Date
AUTHORIZATION: Finding of Feasibility, December 2, 1935 Public Law 89-448, June 4, 1966			
LAND CERTIFICATION: None required DEFINITE PLAN REPORT: Approved March 18, 1968	18.3 1/	18.3 1/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation) 6/	$761,250,000	Allotments to September 30, 1985	$671,076,042
Total Federal Obligations(Other)		Allotments for FY 1986 - 8/	12,599,000
Net Property and Other Transfers:			
Federal Participation	-800,000		
Non-Federal Participation		Allotments to Date	$683,675,042
Adjustment 2/	41,387,000	Allotments Required for FY 1987	23,890,000
Total to be Allocated	$801,837,000	Balance to Complete after FY 1987	$ 53,684,958

ALLOCATIONS 3/		*REPAYMENT*		*AMOUNTS PER ACRE*	
Irrigation		Amount Repaid by:		Irrig. Invest/Acre $	Payment Capacity per Acre-Foot:
Power	$801,053,000	Irrigators		Repayment of Investment per Acre:	Annual Charges:
M&I Water		Power 5/	$801,053,000	By Irrigators	O&M
Recreation		M&I Water		By Power Revenues	Construction
F&WL		State-County			
Flood Control		Local Interests			
Navigation		Deferred Use			
State-County					
Other 4/	784,000	Nonreimbursable 4/	784,000		
Total	$801,837,000		$801,837,000		

STATUS OF REPAYMENT CONTRACT: None required.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality, February 27, 1976. Downstream bank stabilization - final filed March 8, 1982. NEPA decision on installation of overhead lines to the 115 and 230kV switchyards scheduled for January 1986.

DESCRIPTION: The Third Powerplant and appurtenant facilities are located in Okanogan, Douglas, and Grant Counties approximately 95 miles west of Spokane, Washington. The powerplant is an addition to the existing facilities at Grand Coulee Dam and increases the installed capacity by 3,900,000 kilowatts.

PROJECT DATA SHEET - 2
Columbia Basin Project
Third Powerplant, Washington

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1967.

Footnotes:

1/ The direct and total benefit/cost ratios of 18.3 compare with 20.8 as presented in the FY 1986 Budget Justifications. The decrease is due to an increase in construction costs and a current estimate of operating costs. The ratio was computed by using the authorized interest rate of 3-1/8 percent.

2/ Reimbursable interest during construction. Interest during construction is no longer computed because the units are on-line and operational.

3/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Power	$791,023,000	$801,053,000
Other	1,064,000	784,000
Total	$792,087,000	$801,837,000

Explanation	Amount of Change
Changes in quantities or estimates:	
Increase in power due to revised construction costs for completion of the project	$+10,030,000
Decrease in other due to revised estimate for cultural resource activities	- 280,000
Total	$+ 9,750,000

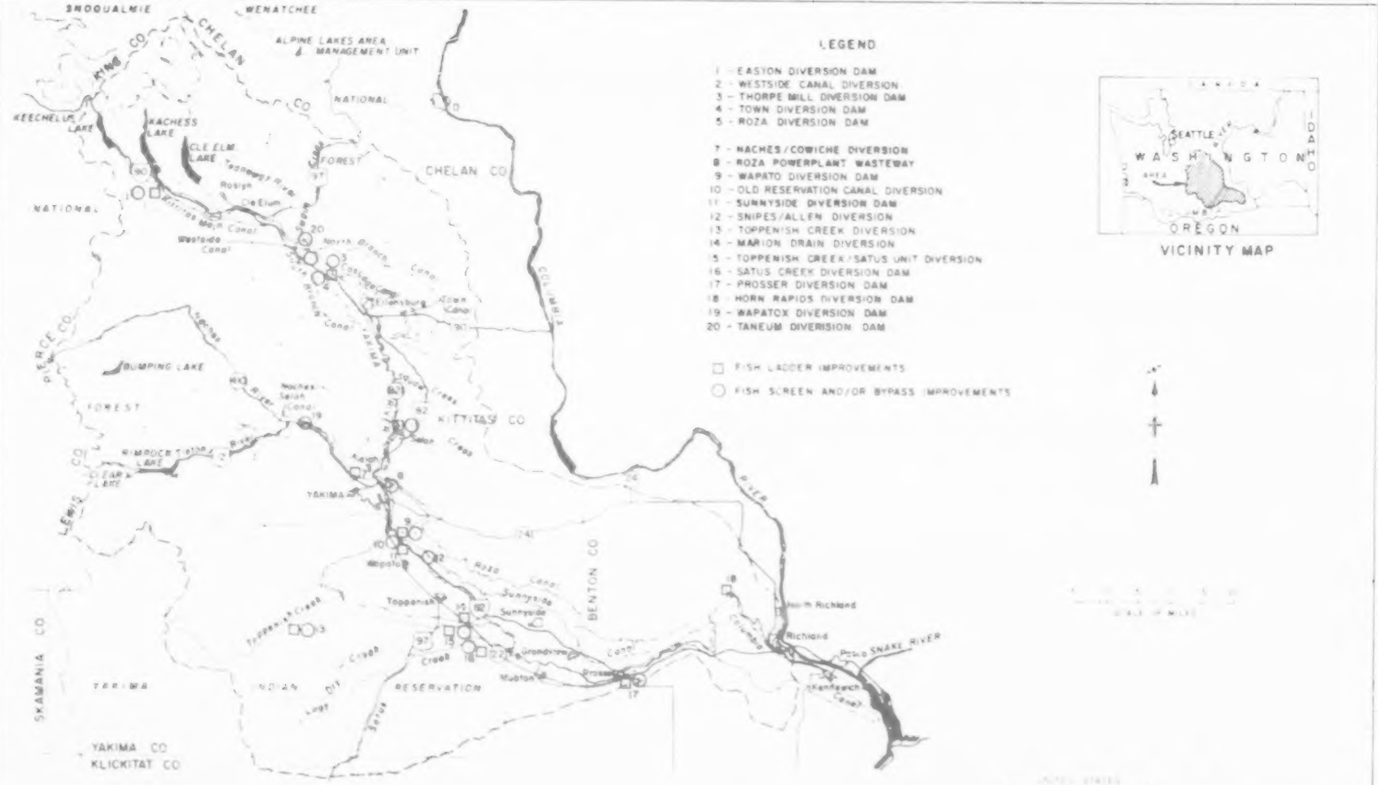
4/ For cultural resource activities (Public Law 93-291).

5/ Power which is excess to project needs is delivered to and marketed by the Bonneville Power Administration as provided in Executive Order 8526 dated August 26, 1940. Power for project use will be repaid under existing water user repayment contracts.

6/ Appropriations authorized are $1,095,912,000 (October 1986). This authorization is adequate to cover the project as currently proposed.

PROJECT DATA SHEET - 3
Columbia Basin Project
Third Powerplant, Washington

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $429,742, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.


SNOQUALMIE
WENATCHEE
CHELAN
KING CO
ALPINE LAKES AREA & MANAGEMENT UNIT
NATIONAL
FOREST
KEECHELUS LAKE
KACHESS LAKE
CLE ELUM LAKE
CHELAN CO
Cle Elum
Roslyn
Westside Canal
North Branch Canal
Ellensburg
Town Canal
COLUMBIA
PIERCE CO
BUMPING LAKE
Naches
FOREST
RIMROCK LAKE
Tieton River
CLEAR LAKE
LEWIS CO
KITTITAS CO
YAKIMA
Selah
Wapato
Toppenish
Toppenish Creek
Roza Canal
Sunnyside
Grandview
Mabton
Prosser
BENTON CO
North Richland
Richland
Pasco
SNAKE RIVER
Kennewick
SKAMANIA CO
YAKIMA
INDIAN
RESERVATION
Satus
YAKIMA CO
KLICKITAT CO
LEGEND
1 - EASTON DIVERSION DAM
2 - WESTSIDE CANAL DIVERSION
3 - THORPE MILL DIVERSION DAM
4 - TOWN DIVERSION DAM
5 - ROZA DIVERSION DAM
7 - NACHES/COWICHE DIVERSION
8 - ROZA POWERPLANT WASTEWAY
9 - WAPATO DIVERSION DAM
10 - OLD RESERVATION CANAL DIVERSION
11 - SUNNYSIDE DIVERSION DAM
12 - SNIPES/ALLEN DIVERSION
13 - TOPPENISH CREEK DIVERSION
14 - MARION DRAIN DIVERSION
15 - TOPPENISH CREEK/SATUS UNIT DIVERSION
16 - SATUS CREEK DIVERSION DAM
17 - PROSSER DIVERSION DAM
18 - HORN RAPIDS DIVERSION DAM
19 - WAPATOX DIVERSION DAM
20 - TANEUM DIVERISION DAM
☐ FISH LADDER IMPROVEMENTS
○ FISH SCREEN AND/OR BYPASS IMPROVEMENTS
SEATTLE
WASHINGTON
IDAHO
OREGON
VICINITY MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION

YAKIMA FISH PASSAGE AND PROTECTIVE FACILITIES

WASHINGTON
JANUARY 1986

REGION:
Pacific Northwest

PROJECT DATA SHEET

PROJECT AND STATE:	Completion Date:	% Complete	Date
YAKIMA FISH PASSAGE AND PROTECTIVE FACILITIES, WASHINGTON	1988 1/	16	1/31/86

AUTHORIZATION: Finding of Feasibility, December 2, 1935
Public Law 98-381, August 17, 1984, and Public Law 98-396, August 22, 1984

LAND CERTIFICATION: None required

DEFINITE PLAN REPORT: None required 2/

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
.9 3/4/	3/4/	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations(Reclamation)	$28,615,000	Allotments to September 30, 1985	$5,499,165
Total Federal Obligations(Other)		Allotments for FY 1986 a/	2,289,000
Net Property and Other Transfers:			
Federal Participation 5/	2,295,000		
Non-Federal Participation 6/	14,297,000	Allotments to Date	$7,788,165
Adjustment		Allotments Required for FY 1987	12,050,000
Total to be Allocated	$45,207,000	Balance to Complete after FY 1987	$8,776,835

ALLOCATIONS 7/		REPAYMENT		AMOUNTS PER ACRE			
Irrigation		Amount Repaid by:		Irrig. Invest/Acre		Payment Capacity per Acre:	
Power		Irrigators		Repayment of Investment per Acre:		Annual Charges:	
M&I Water		Power		By Irrigators		O&M	
Recreation		M&I Water		By Power Revenues		Construction	
F&WL	$45,207,000	Non-Federal Contrib. 6/	$14,297,000				
Flood Control		Bureau of Indian Affairs	1,700,000				
Other		Nonreimbursable 8/	29,210,000				
Total	$45,207,000	Total	$45,207,000			Total	

STATUS OF REPAYMENT CONTRACT: None required.

STATUS OF NEPA COMPLIANCE: Finding of No Significant Impact approved November 20, 1984.

DESCRIPTION: The fish passage and protective facilities are located in the Yakima River basin in south-central Washington. The program includes constructing fish ladders and screen structures at approximately 20 diversion structures on the Yakima River and its tributaries for the purpose of improving passage conditions for anadromous fish. Implementation of the fish passage and protective facilities is expected to increase the annual escapement of anadromous fish from the present 5,000 fish to an estimated 15,500 fish. Fish passage and protective facilities are critically needed to halt the present decline of the basin's anadromous fish runs, allow some of the runs to recover, and enhance the production of salmon and steelhead

DESCRIPTION - continued:

in the Yakima basin. Interest in the project is high because of (1) present court actions reaffirming Indian treaty fishing rights and expanding the actions that must be taken to ensure that these rights are met and (2) passage of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (P.L. 96-501) which directed that action be taken to mitigate for anadromous fish losses resulting from construction of Columbia River dams for power production through offsite enhancement programs such as the Yakima program.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1985.

Footnotes:

1/ Completion of fish passage facilities is scheduled for 1988 which is one year earlier than presented in the FY 1986 justifications. Completion of permanent operating facilities is scheduled for 1989.

2/ Reclamation has entered into an interagency agreement with Bonneville Power Administration to accomplish predesign work activities, which will include primarily the same detailed level of technical analysis that would be accomplished in the advance planning process.

3/ The Yakima fish passage program is a part of the overall Yakima River Basin Water Enhancement Program and will be evaluated as a part of the total enhancement package. The fish passage measures will be funded and implemented in part as an element of the Fish and Wildlife Program under the Pacific Northwest Power Planning and Conservation Act. Under terms of the act, the measures to mitigate, restore, or enhance the fishery are not subject to a favorable benefit-cost determination but "must be designed to achieve sound biological objectives at minimum economic cost." Pacific Northwest Power Planning and Conservation Act, Section 4(b) (1) (c) (IV), (P.L. 96-501 dated December 5, 1980).

4/ Changed from .8 direct benefits as presented in the FY 1986 Budget Justifications. The increase is due to a revised estimate of fish enhancement benefits, partially offset by an increase in costs. Ratio computed by using a 8-5/8% interest rate. Only direct benefits are identified under project evaluation guidelines.

5/ Includes advances from Bureau of Indian Affairs, $1,700,000; and $595,000 Advance Planning funds.

6/ Non-Federal contributions by state and private interests, $2,088,000; and Bonneville Power Administration, $12,209,000. Bonneville Power Administration changed from other Federal participation as presented in the FY 1986 Budget Justifications to non-Federal based on memorandum to the Assistant Commissioner-Water and Science, from Acting Commissioner dated September 24, 1984 and August 15, 1985--Subject: Approval to Credit the State of Washington, Yakima Indian Nation, or other Entities for Funding Contributions to Construct Yakima Fish Facility Improvements--with the Assistant Secretary concurring on September 28, 1984.

PROJECT DATA SHEET - 3
Yakima Fish Passage and Protective Facilities, Washington

7/ Explanation of Changes in allocations from fiscal year 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Fish and Wildlife	$36,080,000	$45,207,000
Total	$36,080,000	$45,207,000

Explanation	Amount of Change
Changes in quantities or estimates:	
Increase due to contractor overruns on West Branch fish ladder at Wapato Diversion Dam for headgate modifications and Right Bank fish ladder at Sunnyside Diversion Dam for additional materials	$+ 331,000
Increase in estimates for facilities at Prosser Diversion Dam, Roza Wasteway, Easton Diversion Dam, and Toppenish Creek, based on more accurate data than was available for FY 1986 Budget Justifications including bids received to date on similar work	+2,230,000
Revised estimates for facilities at Wapato Diversion Dam, Sunnyside Diversion Dam, Prosser Diversion Dam, Horn Rapids Diversion Dam, and Roza Diversion Dam, based on final designs and actual contract award amounts	+2,203,000
New or deleted features:	
Other Project Costs	+ 928,000
Permanent Operating Facilities	+3,450,000
Elimination of Stevens Ditch from program	- 15,000
Total	$+9,127,000

8/ Nonreimbursable funding provided by Reclamation consists of $28,615,000 appropriated funds and $595,000 Advance Planning funds.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $15,179, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY1987 Budget Justifications.

Appropriation Title: Construction Program
Construction and Rehabilitation

FISH PASSAGE AND PROTECTIVE FACILITIES, WASHINGTON - 4

FISCAL YEAR 1987

Work Proposed	Program
Wapato Diversion Dam. - Construction work will be completed on the fishway.	$ 445,000
Old Reservation Canal. - Construction work will begin on the screen structure.	150,000
Prosser Diversion Dam. - Construction work will be completed on the fishway and screen structure.	5,046,000
Roza Diversion Dam. - Construction work will be completed on the fishway and screen structure.	4,584,000
Easton Diversion Dam. - Construction work will begin on the fishway and screen structure.	1,645,000
Town Diversion Dam. - Provides for preconstruction activity.	23,000
Marion Drain Diversion. - Construction will begin on the fishway.	110,000
Westside Ditch. - Construction work will begin and be completed on the screen structure.	230,000
Taneum Diversion Dam. - Construction work will begin on the fishway and screen structure.	80,000
Snipes/Allen Canal. - Construction work will begin on the screen structure.	75,000
Thorpe Mill Diversion. - Construction work will begin on the screen structure.	190,000
Toppenish Creek Diversion Dam. - Construction work will be completed on the fishway and screen structure.	
Wapatox Diversion Dam. - Construction work will begin and be completed on the screen structure.	65,000
Permanent Operating Facilities. - Acquisition of permanent operating facilities will continue.	500,000
Non-Federal Participation	-1,333,000
TOTAL	$12,050,000

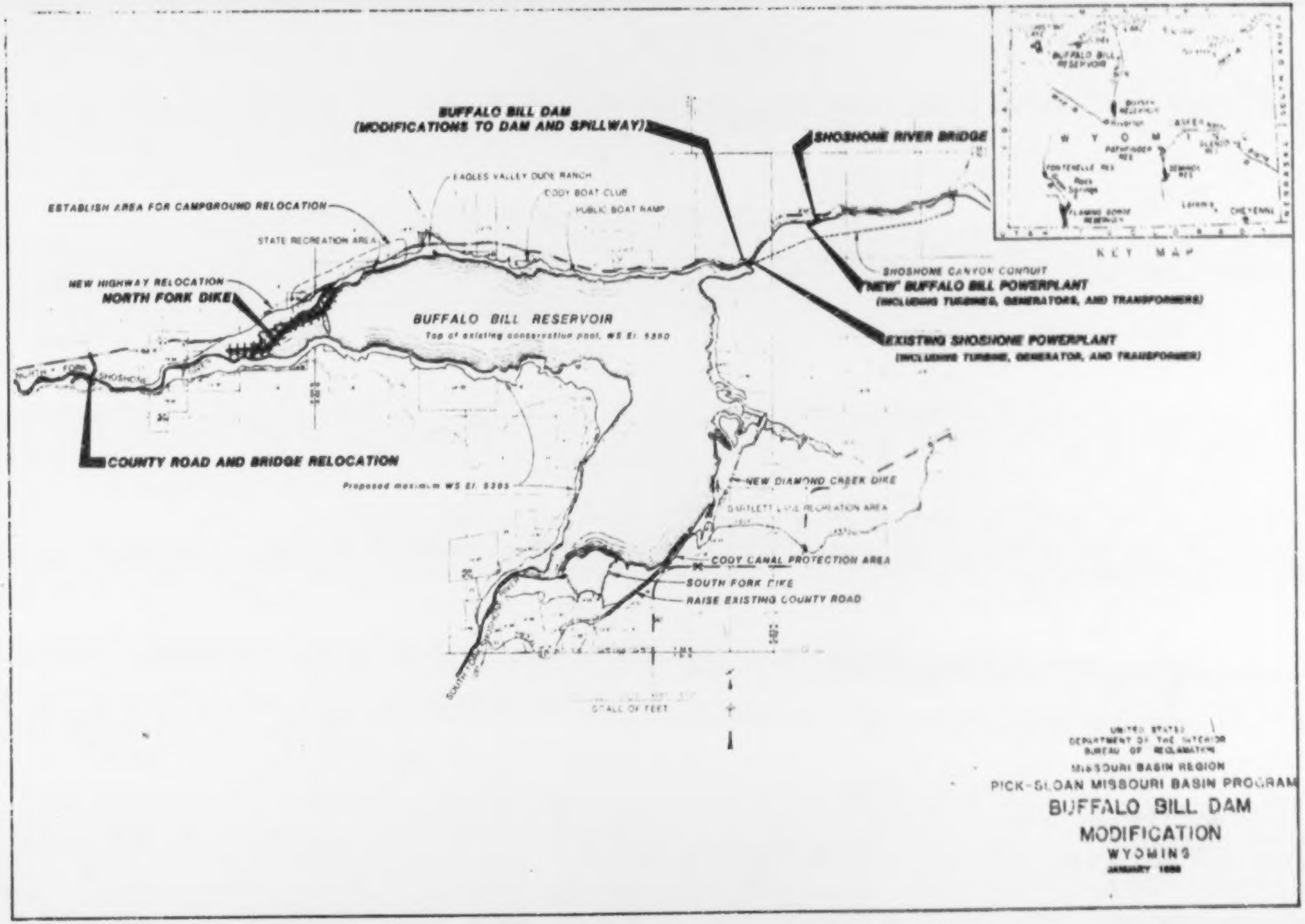
Yakima Fish Passage and Protective Facilities

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Sunnyside Diversion Dam	4,768,000	3,390,000	1,378,000	---	0
Wapato Diversion Dam	5,511,000	1,345,000	3,721,000	445,000	0
Old Reservation Canal	260,000	---	---	150,000	110,000
Toppenish Creek/Satus Unit Division	1,535,000	122,000	1,413,000	---	0
Prosser Diversion Dam	10,723,000	1,375,000	5,001,000	5,046,000	(699,000)
Roza Diversion Dam	8,065,000	336,000	3,145,000	4,584,000	0
Roza Powerplant Wasteway	758,000	23,000	735,000	---	0
Easton Diversion Dam	5,005,000	---	840,000	1,645,000	2,520,000
Horn Rapids Diversion Dam	1,843,000	375,000	1,468,000	---	0
Town Diversion Dam	315,000	---	---	23,000	292,000
Naches-Cowiche Diversion Dam	502,000	502,000	---	---	0
Marion Drain Diversion	150,000	---	---	110,000	40,000
Westside Ditch	260,000	---	30,000	230,000	0
Taneum Diversion Dam	215,000	---	---	80,000	135,000
Snipes/Allen Canal	110,000	---	---	75,000	35,000
Satus Creek Diversion	14,000	---	14,000	---	0
Thorpe Mill Diversion	300,000	---	---	190,000	110,000
Toppenish Creek Diversion	420,000	---	180,000	240,000	0
Wapatox Diversion Dam	75,000	---	10,000	65,000	0
Permanent Operating Facilities	3,450,000	---	100,000	500,000	2,850,000
Service Facilities, Depreciation and Salvage	---	177,000	---	---	(177,000)
Other Project Costs	928,000	858,000	70,000	---	0
Engineering and Design	[3,314,000]	[1,666,000]	[1,223,000]	[300,000]	[125,000]
Supervision and Administration	[5,184,000]	[2,011,000]	[1,484,000]	[1,387,000]	[302,000]
Total Project Cost	45,207,000	8,503,000	18,105,000	13,383,000	5,216,000

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Non-Federal Participation	(14,297,000)	(5,029,000)	(7,508,000)	(1,333,000)	(427,000)
Consolidated Expenditures and Credits	(2,295,000)	(1,506,670)	(776,165)	---	(12,165)
Total Expenditures	28,615,000	1,967,330	9,820,835	12,050,000	4,776,835
Undelivered Orders	---	534,835	(534,835)	---	---
Total Obligations	28,615,000	2,502,165	9,286,000	12,050,000	4,776,835
Method of Financing:					
Appropriation available and required	---	---	$2,289,000	$12,050,000	$8,776,835
Application of prior year funds	---	---	2,997,000	---	---
Underfinancing	---	---	4,000,000	---	---


BUFFALO BILL DAM (MODIFICATIONS TO DAM AND SPILLWAY)
SHOSHONE RIVER BRIDGE
EAGLES VALLEY DUDE RANCH
CODY BOAT CLUB
PUBLIC BOAT RAMP
ESTABLISH AREA FOR CAMPGROUND RELOCATION
STATE RECREATION AREA
NEW HIGHWAY RELOCATION
NORTH FORK DIKE
BUFFALO BILL RESERVOIR
Top of existing conservation pool, WS El. 5360
NORTH FORK SHOSHONE
COUNTY ROAD AND BRIDGE RELOCATION
Proposed maximum WS El. 5393
SHOSHONE CANYON CONDUIT
"NEW" BUFFALO BILL POWERPLANT (INCLUDING TURBINES, GENERATORS, AND TRANSFORMERS)
EXISTING SHOSHONE POWERPLANT (INCLUDING TURBINE, GENERATOR, AND TRANSFORMER)
NEW DIAMOND CREEK DIKE
BARTLETT LANE RECREATION AREA
CODY CANAL PROTECTION AREA
SOUTH FORK DIKE
RAISE EXISTING COUNTY ROAD
SOUTH FORK
SCALE OF FEET
BUFFALO BILL RESERVOIR
BOYSEN RESERVOIR
Riverton
W Y O M I N G
PATHFINDER RES
FONTENELLE RES
Rock Springs
FLAMING GORGE RESERVOIR
SEMINOE RES
GLENDO RES
Laramie
CHEYENNE
NEBRASKA
SOUTH DAKOTA
KEY MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MISSOURI BASIN REGION
PICK-SLOAN MISSOURI BASIN PROGRAM
BUFFALO BILL DAM
MODIFICATION
WYOMING
JANUARY [illegible]

REGION

Missouri Basin

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE PICK-SLOAN MISSOURI BASIN PROGRAM BUFFALO BILL DAM MODIFICATION, WYOMING	Completion Date 1990 1/	% Complete 0	Date 1/31/86

AUTHORIZATION

Public Law 97-293, October 12, 1982

LAND CERTIFICATION

None required

DEFINITE PLAN REPORT Approved October 14, 1982; supplemental was completed on May 25, 1984

BENEFIT COST RATIOS		
Based on Direct Benefits	Based on Total Benefits	Date
2/ 1.8	2/ 1.8	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation) 15/	$66,235,000	Allotments to September 30, 1985	$ 7,997,750
Net Property and Other Transfers: (Dept. of Energy) 3/	1,760,000	Allotments for FY 1986	---
Federal Participation 4/	2,119,000		
Non Federal Participation 5/	47,000,000	Allotments to Date	7,997,750
Adjustment 6/	5,846,000	Allotments Required for FY 1987	13,400,000
Total to be Allocated	$122,960,000	Balance to Complete after FY 1987	$44,837,250

ALLOCATIONS 7/		REPAYMENT		AMOUNTS PER ACRE	
Irrigation	---	Amount Repaid by Irrigators		Irrig. Invest. per Acre	Payment Capacity per Acre
Power	$50,653,000	Amount Repaid by Power 11/	$33,263,000	Repayment of Investment per Acre:	Annual Charges:
M & I Water	26,688,000	Amount Repaid by M & I Water 12/	14,148,000	By Irrigators	O & M
Recreation	2,998,000	State of Wyoming (Cash Advance) 13/	47,000,000	By Power Revenues	Construction
F & WL	467,000			By M & I Water Users	
Flood Control	---				
Environmental 8/	38,930,000				
Highway Impr. 9/	2,600,000				
Other 10/	624,000	Nonreimbursable Federal 14/	28,549,000		
Total	$122,960,000	Total	$122,960,000		Total

STATUS OF REPAYMENT CONTRACT: Contract with State of Wyoming for financial participation and repayment of cost was executed on March 29, 1985. On March 2, 1982, the Wyoming Legislature appropriated up to $47 million to participate in financing Buffalo Bill Dam Modifications.

STATUS OF NEPA COMPLIANCE: Projectwide final Environmental Impact Statement was filed with Environmental Protection Agency on November 9, 1981. Projectwide Finding of No Significant Impact (FONSI UM84-1) was dated March 14, 1984.

DESCRIPTION: The project is located at the confluence of the North and South Forks of the Shoshone River in northwest Wyoming in Park County. Buffalo Bill Dam will be raised 25 feet to enlarge the reservoir and increase conservation storage by 271,300 acre-feet with a firm yield of 74,000 acre-feet provided at the mouth of the Shoshone River for the State of Wyoming to market for beneficial uses including irrigation and municipal and industrial water supplies. The spillway will be enlarged and gated. A new 18-megawatt powerplant will be constructed about 4,350 feet downstream from the dam and will use the existing Shoshone Canyon conduit as a penstock. A new 3-megawatt unit and a museum will be installed in the existing Shoshone Powerplant structure. This structure contains the original 5.6-megawatt Shoshone Powerplant which was shut down in 1980. The projected annual energy production is 71,800,000 kilowatt-hours from the combined 21 installed megawatts. Dikes will be constructed in the North and South Fork arms of the reservoir to retain water over potential dust-producing areas, and a protective dike will be built in the Diamond Creek area to preserve existing development and use.

PROJECT DATA SHEET - 2
Pick-Sloan Missouri Basin Program
Buffalo Bill Dam Modification

OTHER INFORMATION: Funds to initiate advance planning were appropriated in FY 1983. Senate Report No. 98-502, supporting the FY 1985 Energy and Water Development appropriation, states "The Bureau of Reclamation may use available construction funds for preconstruction planning work on the Buffalo Bill Dam Modification Project." An amount of $3.3 million was then made available for this preconstruction work. H.R. 2577, a FY 1985 supplemental appropriations bill, includes authorization to begin construction in FY 1985 on this project.

Footnotes:

1/ The completion date shown on the Project Data Sheet in the FY 1986 Budget Justifications was an error. Correct date should have been 1990.

2/ Under present guidelines, only direct benefits are identified. Benefit-cost ratio is based on the authorized interest rate of 7-5/8 percent and October 1986 price levels. The benefit-cost ratio includes Interest During Construction on both Federal and nonfederal contributions.

3/ Cost of transmission and switchyard facilities to be funded by Department of Energy.

4/ Includes preauthorization investigation costs of $524,057.

5/ Under Enrolled Act No. 11, House of Representatives, Forty-Sixth Legislature of the State of Wyoming 1982 Session, there is appropriated from the Wyoming Water Development Account to the Department of Economic Planning and Development the sum of $47,000,000, or as much thereof as may be necessary to pay the State's share of costs under the agreement to be negotiated with the Bureau of Reclamation for State participation in Buffalo Bill Dam Modifications.

6/ Represents reimbursable interest during construction of $4,039,000 for power at 9.5 percent and $1,807,000 for municipal and industrial water at 10.051 percent on Federal obligation only, and - $57 for rounding.

PROJECT DATA SHEET - 3
Pick-Sloan Missouri Basin Program
Buffalo Bill Dam Modification

Footnotes: (continued)

7/ Explanation of changes in allocations from the FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Power	$ 43,352,000	$ 50,653,000
Municipal and Industrial Water	33,352,000	26,688,000
Recreation	3,252,000	2,998,000
Fish and Wildlife	547,000	467,000
Environmental Quality	40,900,000	38,930,000
Highway Improvement	2,650,000	2,600,000
Other	1,704,000	624,000
Total	$125,757,000	$122,960,000

Explanation	Amount of Change
Changes in Cost Estimates (Oct. 1985 to Oct. 86)	$-2,870,000
Interest during Construction	+ 73,000
Total	$-2,797,000

8/ The $38,930,000 is the incremental costs of the Environmental Quality plan over and above the National Economic Development plan. Section 103 of the authorizing act states "* * * costs allocated to environmental quality shall be nonreimbursable and nonreturnable under Federal Reclamation law." The State of Wyoming is sharing in these costs in the amount of $15,872,000.

9/ This is the amount of construction costs for highway improvement which exceeds replacement in kind and is nonreimbursable (Public Law 87-874 as amended by Public Law 93-251). The State of Wyoming is sharing in these costs in the amount of $1,198,000.

10/ Includes $524,057 for preauthorization investigation costs and $100,000 for cultural resources activities, Public Law 93-291, and -$57 for rounding.

11/ The amount to be repaid by power is currently identified for repayment from net power revenues generated by the Pick-Sloan Missouri Basin Program power rate.

PROJECT DATA SHEET - 4
Pick-Sloan Missouri Basin Program
Buffalo Bill Dam Modification

Footnotes: (continued)

12/ The contract with the State of Wyoming for financial participation and repayment of costs includes marketing and repayment of the amount to be repaid by M&I Water.

13/ Includes $17,390,000 for power, $12,540,000 for M&I, $15,872,000 for Environmental Quality, and $1,198,000 for Highway Improvement. No reimbursable interest during construction is shown for the State share.

14/ Includes Federal nonreimbursable cost of $100,000 for cultural resources activities, $23,058,000 for environmental quality, $467,000 for fish and wildlife, $2,998,000 for recreation, $1,402,000 for highway improvement, $524,057 for preauthorization investigations, and -$57 for rounding.

15/ Appropriations authorized are $117,556,000 (October 1986). This authorization shall be reduced under the provisions of Section 107 of Public Law 97-293, October 12, 1982, by the amount of $47,000,000 contributed to the project by the State of Wyoming; therefore, the federal appropriation authorized is $70,556,000. The comparable federal obligation, after subtracting contributed funds from the construction cost, is $67,830,000. The authorization is adequate to cover this project as currently proposed.

PICK-SLOAN MISSOURI BASIN PROGRAM
BUFFALO BILL DAM MODIFICATION, WYOMING

PHYSICAL DATA ON STRUCTURES - 5

COMPLETED WORK:

Buffalo Bill Dam

Dam:
Type - Concrete arch structure
Structural Height - 325 feet
Crest Length - 200 feet

Spillway:
Type - Uncontrolled concrete side channel weir upstream from left abutment and unlined tunnel through abutment to river
Design Discharge - 18,000 cubic feet per second

Reservoir capacity:
Total Storage
423,970
acre-feet

Shoshone Powerplant
Generating Units - One 4,000-kilowatt and two 800-kilowatt (shut down in 1979)
Generating Head - 143 feet

Switchyard
Capacity - 22,154 kilovolt-ampere

CONSTRUCTION PROGRAM: 1/

Buffalo Bill Dam and Powerplant

Dam:
Type - Concrete arch structure
Structural Height - 350 feet
Crest Length - 259 feet

Spillway:
Type - Gated concrete side channel
Design Discharge - 66,850 cubic feet per second

Reservoir capacity:
Total Storage
695,400
acre-feet

Shoshone Powerplant:
Generating Unit - One 3,000-kilowatt
Generating Head - 215 Feet

Capacity:
191 Cubic Feet per Second

Buffalo Bill Powerplant:
Generating Units - Three 6,000-kilowatt
Generating Head - 265 Feet

Capacity:
930 Cubic Feet per Second

1/ The Energy Dissipation Power Plant was deleted due to fund ceiling constraints.

PICK-SLOAN MISSOURI BASIN PROGRAM
BUFFALO BILL DAM MODIFICATION, WYOMING

PHYSICAL DATA ON STRUCTURES - 6

CONSTRUCTION PROGRAM: (continued)

Dust Abatement Dikes:
South Fork - 1.8 miles in length
North Fork - 1.8 miles in length

Visitor Center:
Located in existing powerplant structure

Protective Dike:
Diamond Creek - 1.5 miles in length

Land and Rights
Quantity - 1,330 acres
Total Estimated Cost - $6,170,000
Cost per Acre - $4,639 1/
Acquisition - There have not been any acquired as of September 30, 1985

Relocation:
Total Estimated Cost - $9,296,000
Percent complete - No relocation work has been accomplished as of September 30, 1985

Items:	Length	Total cost	Cost to September 30, 1985
U.S. Highways No. 14, 16, and 20	3.4 miles	$7,873,000	---
County Road (including bridge)	500 feet	873,000	---
Campground and Recreation Facility	---	550,000	---
TOTAL		$9,296,000	---

1/ Land and rights costs include the purchase of homes, farms, ranch headquarters and the relocation of families.

Appropriation Title: Construction Program
Construction and Rehabilitation

PICK-SLOAN MISSOURI BASIN PROGRAM
BUFFALO BILL DAM MODIFICATION, WYOMING - 7

FISCAL YEAR 1987

Work Proposed	Program
Buffalo Bill Dam Modification. - Construction of bridges will continue and contracts will be awarded for modification of the dam and spillway. Land acquisition will be completed.	$10,158,000
Dikes. - A contract will be awarded for construction of the North Fork dike. Work will complete on quarrying and stockpiling riprap.	5,198,000
Buffalo Bill Powerplants. - Contract will be awarded for conduit modifications. Contracts will continue for manufacture of turbines, generators, and transformers and for Buffalo Bill Powerplant.	8,450,000
Service Facilities, Depreciation, and Salvage. - For the purchase of office and laboratory equipment.	40,000
Other Project Costs. - Provides for archeological and historical preservation.	20,000
Non-Federal Participation.	-10,466,000
TOTAL	$13,400,000

PICK-SLOAN MISSOURI BASIN PROGRAM, BUFFALO BILL DAM MODIFICATION, WYOMING

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Buffalo Bill Dam Modifications	$ 38,245,000	$ 1,780,336	$ 4,974,000	$10,158,000	$ 21,332,664
Dikes	39,840,000	1,006,000	4,235,000	5,198,000	29,401,000
Buffalo Bill Powerplants	36,095,000	1,135,000	1,419,000	8,450,000	25,091,000
Recreation Facilities	550,000	50,000	235,000	---	265,000
Services Facilities, Depreciation, and Salvage . .	---	40,307	25,000	40,000	-105,307
Engineering and Design	(17,030,000)	(2,696,000)	(2,334,000)	(3,737,000)	(8,263,000)
Supervision and Administration	(11,354,955)	(1,798,178)	(1,556,000)	(2,492,898)	(5,507,878)
Relocation Costs.	(9,296,000)	(50,000)	(285,000)	(513,000)	(8,448,000)
Total Construction Cost	$114,730,000	$ 4,011,643	$10,888,000	$23,846,000	$ 75,984,357
Other Project Costs	624,000	524,057	20,000	20,000	59,943
Total Project Cost	$115,354,000	$ 4,535,700	$10,908,000	$23,866,000	$ 76,044,300
Non-Federal Participation	-47,000,000	---	-5,180,000	-10,466,000	-31,354,000
Consolidated Expenditures and Credits	-2,119,000	-2,265,948	2	---	146,946
Total Expenditures	$ 66,235,000	$ 2,269,752	$ 5,728,002	$13,400,000	$ 44,837,246
Undelivered Orders.	---	44,967	-44,967	---	---
Total Obligations	$ 66,235,000	$ 2,314,719	$ 5,683,035	$13,400,000	$ 44,837,246
Method of Financing:					
Appropriations available and required	$ 66,235,000	$ 7,997,750	$ ---	$13,400,000	$ 44,837,250
Application of prior year funds	---	---	5,683,035	---	---
Non-Federal participation:					
Cash	(47,000,000)	---	(5,180,000)	(10,446,000)	(31,354,000)

GPO [illegible]

Appropriation Title: Construction Program
Construction and Rehabilitation

DRAINAGE AND MINOR CONSTRUCTION PROGRAM

Summarized Financial Data:

Fiscal Year 1986:

Appropriation	$34,407,000	
Application of Prior Year Funds	5,598,335	
Reduction	a/	
Total Obligations, FY 1986		$40,005,335

Fiscal Year 1987:

Estimate of Appropriation	$35,259,000	
Total Obligations, FY 1987		$35,259,000

Description: The drainage and minor construction program consists mostly of minor completion work on projects for which major construction is completed. Work in this category includes drainage work, minor repair, modification work, miscellaneous finishing activities, preconstruction on temporarily deferred facilities, and investigations for settlement of claims. A program of investigation and construction of recreation facilities at existing reservoirs under Public Law 89-72 is included and provision is made for activities to identify and preserve important cultural resources as authorized by Public Law 96-515.

---

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman) funding for this activity in FY 1986 will be reduced by $1,157,001. The impact of the FY 1986 reduction to the individual project completions or the funding estimate to complete them has not been adjusted in the FY 1987 Budget Justifications.

FISCAL YEAR 1987

Work Proposed

The fiscal year 1987 program involves activity on 23 projects, which includes 6 units of the Pick-Sloan Missouri Basin Program, cultural resources activities, and miscellaneous engineering services. Three projects have been added to the D&MC category but only one, Ainsworth Unit, is considered a new project initiative in fiscal year 1987. The other two projects are reclassifications of ongoing major projects which are nearing completion. Activities will be completed on 5 projects during fiscal year 1987.

Appropriation Title: Construction Program
Construction and Rehabilitation
Drainage and Minor Construction Progam - 2

FISCAL YEAR 1987

PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987

Work Proposed	Program
Arbuckle Project, Oklahoma. - Collection of design data will be completed and preparation of designs and specifications started for the pumping plant and pipeline.	$ 310,000
Boise Project, Idaho.	
Arrowrock Dam - Construction work will begin on the modification of the outlet works and installation of high pressure gates and valves.	1,490,000
Payette Division - Construction will continue on minimum basic health and safety facilities at Cascade and Black Canyon Reservoirs.	1,289,000
Colorado River Front Work and Levee System, Arizona, California, Nevada. - Riprap protection of existing levees located along the Colorado River from Davis Dam to the Southerly International Boundary with Mexico continues with the completion of armoring the Lower Cibola Levee, along with the start of armoring the Middle Mohave Levee. Work to repair river facilities and waterways (damaged by high river flows during the summer of 1983) in order to protect against further bankline erosion continues with repairs to Colorado River banklines, and replenishing riprap and gravel stockpiles. Work to provide river control and channel rectification to protect against further damage continues with construction of the Nevada Extention Levee and the Palo Verde Levee. Also scheduled to begin is bankline stabilization work in the Parker Division in Arizona and California.	15,885,000
Cultural Resources Activities, California, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Texas, Wyoming. - Provides for project surveys, data collection, and archeological investigations to locate, evaluate and protect cultural resources of prehistoric and historic significance. Work will continue at various site locations in ten states.	507,000
Fryingpan-Arkansas Project, Colorado. - Dikes will be removed at Twin Lakes and construction will continue on the recreation facilities, fish hatchery complex, and permanent operating facilities.	5,513,000

Appropriation Title: Construction Program
Construction and Rehabilitation
Drainage and Minor Construction - 3

FISCAL YEAR 1987

Work Proposed (Continued)	Program
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987 - (Continued)	
Gila Project, Arizona. - Construction of Gila River channel enhancement features to improve drainage will be completed.	845,000
Klamath Project, California-Oregon. - Contracts for Area K road surfacing, Lower Klamath Lake Division; and distribution system, White Lake Division will be awarded. Construction will continue on distribution systems, White Lake Division and the rehabilitation of the A-Canal, Main Division. Preconstruction activities on other features will continue.	1,889,000
Leadville Mine Drainage Tunnel, Colorado. - Analysis of geological data will be completed and data collection continued on observation wells drilled during fiscal year 1985, and initiation and completion of final design for selected corrective action plan.	375,000
Miscellaneous Engineering Services, Colorado. - Work will continue on completion and printing of technical records of design and construction and as-built drawings on completed projects.	10,000
Mountain Park Project, Oklahoma. - Modification of the control equipment for the Frederick Pumping Plant will be completed.	150,000
Newlands Project, Nevada. - Contracts will be awarded for concrete lining of Lahontan Powerplant conveyance channel on the Truckee Canal; and rehabilitation of the Harmon Reservoir inlet and concrete lining of the A-Canal of the Main Carson Division. Final designs will be completed and specifications prepared for repair/replacement of the Lake Tahoe Dam and repair of Derby Diversion Dam. Design data collection will be completed for repair/automation of structures on the Truckee Canal, and repair of concrete lining on the S-5 lateral. Final designs will be initiated for repair/automation of structures on the Main Carson Division. Monitoring of compliance with Operating Criteria and Procedures (OCAP) will continue.	1,134,000
Palmetto Bend Project, Texas. - Acquisition of mineral interests will be completed.	150,000

Appropriation Title: Construction Program
Construction and Rehabilitation
Drainage and Minor Construction - 4

FISCAL YEAR 1987

Work Proposed - (Continued)	Program
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987 - (Continued)	
Pick-Sloan Missouri Basin Program:	
Canyon Ferry Unit, Montana. - Repair of damaged dikes will be completed.	522,000
East Bench Unit, Montana. - Installation of drains will continue.	50,000
Farwell Unit, Nebraska. - Construction of canal lining and pipe laterals will continue.	180,000
Oahe Unit, South Dakota. - Maintenance will continue on Oahe Pumping Plant and Reaches 1A and 1B of Pierre Canal, site security, and land management will be accomplished on existing facilities and Blunt Reservoir lands.	65,000
Owl Creek Unit, Wyoming. - Stream gage monitoring and overhead costs will continue.	5,000
Washoe Project, California-Nevada. - Studies will continue on Stillwater Wildlife Area Improvement Facilities, Pyramid Lake fishway modification, Truckee River Fishery Improvements, and cooperation with local entities in studies of the Watasheamu Division alternative.	205,000
Weber Basin Project, Utah. - Design data will be completed for the rehabilitation of Watkins Dam.	385,000
PROJECTS ADDED TO THE D&MC CATEGORY DURING FY 1987	
Nueces River Project, Texas. - Construction of the Calliham recreation facilities will be completed. Land acquisition will be continued.	1,420,000
Pick-Sloan Missouri Basin Program:	
Ainsworth Unit, Nebraska. - Modification of the downstream portion of the abutment will be performed to correct minor seepage of Merritt Dam.	600,000

Appropriation Title: Construction Program
Construction and Rehabilitation
Drainage and Minor Construction - 5

FISCAL YEAR 1987

Work Proposed - (Continued)	Program
PROJECTS ADDED TO THE DAMC CATEGORY DURING FY 1987 - (Continued)	
Velarde Community Ditch Project, New Mexico. - Construction of diversion structures will be completed. A contract will be awarded for rehabilitation of canal structures.	2,280,000
TOTAL PROGRAM	$35,259,000
Federal Obligations (Reclamation)	$35,259,000

DRAINAGE AND MINOR CONSTRUCTION PROGRAM - 1

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPT 19	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987					
Arbuckle Project, Oklahoma	$ 3,560,000	$ 263,854	$ 440,000	$ 310,000	$ 2,546,146
Baker Project, Oregon	1,750	750	1,000	---	---
Boise Project, Arrowrock Division, Idaho	6,870,000	176,407	300,000	1,490,000	4,903,593
Boise Project, Payette Division, Idaho	31,040,000	27,562,958	236,000	1,289,000	1,952,042
Chief Joseph, Manson Unit, Washington	17,728,915	17,713,915	15,000	---	---
Chief Joseph, Whitestone - Coulee Unit, Washington	8,460,966	8,429,966	31,000	---	---
Colorado River Front Work and Levee System, Various	158,812,000	28,300,833	17,371,000	15,885,000	97,255,167
Cultural Resources Activities, Various	3,401,000	---	327,000	507,000	2,567,000
Eden Project, Wyoming	13,830,941	13,815,941	15,000	---	---
Fryingpan-Arkansas Project, Colorado	495,694,842	1/ 476,311,514	6,034,000	5,513,000	7,836,328
Gila Project, Arizona	78,115,000	75,682,724	1,997,000	845,000	-409,724
Klamath Project, Oregon-California	51,533,000	37,902,438	2,356,000	1,889,000	9,385,562
Leadville Mine Drainage Tunnel, Colorado	7,345,891	3,376,421	70,000	375,000	3,524,470
Mann Creek, Idaho	1,750	750	1,000	---	---
Miscellaneous Engineering Service, Colorado	432,612	412,612	10,000	10,000	---
Mountain Park Project, Oklahoma	42,638,762	42,202,762	286,000	150,000	---
Newlands Project, Nevada	26,146,000	3,550,530	1,179,000	1,134,000	20,282,470
Palmetto Bend Project, Texas	74,145,976	2/ 73,417,976	578,000	150,000	---
Pick-Sloan Missouri Basin Program					
Bostwick Division, Nebraska	57,506,000	53,297,646	49,000	---	4,159,354
Canyon Ferry Unit, Montana	17,606,560	15,260,560	1,824,000	522,000	---
Dickinson, North Dakota	7,608,000	7,363,000	245,000	---	---
East Bench Unit, Montana	24,230,000	23,247,036	50,000	50,000	882,964
Farwell Unit, Nebraska	42,828,586	40,070,631	397,000	180,000	2,180,955
Oahe Unit, South Dakota	490,000,000	41,926,625	65,000	65,000	447,943,375
Owl Creek Unit, Wyoming	7,010,000	6,684,368	50,000	5,000	270,632
Riverton Unit, Wyoming	45,593,123	45,156,123	437,000	---	---
Recreation Facilities at Existing Reservoirs, Various States	344,000	3/ 128,000	4/ 216,000	---	---

---

1/ Includes $1,194,678 non-Federal contributions.
2/ Includes $1,000,000 non-Federal contributions.
3/ Includes $128,000 non-Federal contributions.
4/ Includes $44,000 non-Federal contributions.

GPO 831-380

DRAINAGE AND MINOR CONSTRUCTION PROGRAM - 2

PF-4P (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987 - Continued					
Robert B. Griffith Water Project, Nevada	174,079,444	1/ 172,966,672	1,112,772	---	---
Regional Complex, Nevada	5,430,000	355,000	75,000	---	5,000,000
Rogue River, Oregon	7,500	1,500	6,000	---	---
Tualatin Project, Oregon	60,537,143	56,750,143	57,000	---	3,730,000
Washita Basin Project, Foss Dam, Oklahoma	32,450,981	32,350,981	100,000	---	---
Washoe Project, California-Nevada	356,455,000	39,818,230	1,537,000	205,000	314,894,770
Weber Basin Project, Utah	98,052,940	94,745,736	1,269,000	385,000	1,653,204
Subtotal - Drainage and Minor Construction Prior to FY 1987	$2,439,498,682	$1,439,244,602	$38,736,772	$30,959,000	$930,558,308
PROJECTS ADDED TO THE DRAINAGE AND MINOR CONSTRUCTION CATEGORY DURING FY 1987					
Nueces River Project, Texas	122,029,522	2/ 113,312,453	5,028,563	1,420,000	2,268,506
Pick-Sloan Missouri Basin Program, Ainsworth Unit, Nebraska	25,683,422	25,083,422	---	600,000	---
Velarde Community Ditch Project, New Mexico	17,526,000	4,025,406	3,404,000	2,280,000	7,816,592
Subtotal - Additional Projects	$ 165,238,944	$142,421,283	$ 8,432,563	$ 4,300,000	$ 10,085,098
Non-Federal Participation	-29,002,531	-28,958,531	-44,000	---	---
Total Obligations (Reclamation)	$2,575,735,095	$1,552,707,354	$47,125,335	$35,259,000	$940,643,406
Method of Financing:					
Appropriation available and required	$ ---	---	$34,407,000	$35,259,000	$940,643,406
Application of prior year funds	---	---	5,598,335	---	---
Non-Federal participation:					
Cash	(29,002,531)	(28,958,531)	(44,000)	---	---
Underfinancing	---	---	7,120,000	---	---

1/ Includes $2,160,678 non-Federal contributions.
2/ Includes $24,475,000 non-Federal contributions.

Appropriation Title: Construction Program
Construction and Rehabilitation

REHABILITATION AND BETTERMENT OF EXISTING PROJECTS

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$5,493,000	
Application of Prior Year Funds	652,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	a/	
Total Obligations, FY 1986		$6,145,000
Fiscal Year 1987:		
Estimate of Appropriation	$3,647,000	
Total Obligations, FY 1987		$3,647,000

Description: On existing older projects, some of the structures have exceeded their useful life; and, in the long run, replacement is more economical than continuing extensive repairs. The deteriorated facilities often result in inefficient use or loss of irrigation water. Needed repairs in most instances are beyond the ability of the water users to finance on a current year basis. In addition, there have been many changes in land use, methods of irrigation, and types of crops raised; and to place these older projects on a basis comparable to those now being constructed, the facilities need not only to be rehabilitated but also improved.

Repayment: The Act of October 7, 1949, as amended, which is the basic authorizing legislation for the rehabilitation and betterment program, requires execution of contracts for the repayment of the cost of the rehabilitation and betterment work allocable to reimbursable functions. The annual rate of payment is based on the finding of the Secretary of the Interior as to the ability of the users to pay, after giving due consideration to any other outstanding repayment obligations.

During fiscal year 1987, rehabilitation and betterment work will be underway on five projects, one of which will be completed in fiscal year 1987. Work on the remaining four is anticipated to continue beyond fiscal year 1987.

---

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman) funding for this activity in FY 1986 will be reduced by $225,535. The impact of the FY 1986 reduction to the individual project completions or the funding estimate to complete them has not been adjusted in the FY 1987 Budget Justifications.

Appropriation Title: Construction Program
Construction and Rehabilitation
Rehabilitation and Betterment - 2

FISCAL YEAR 1987

Work Proposed		Program
PROJECTS INCLUDED IN REHABILITATION AND BETTERMENT CATEGORY PRIOR TO FISCAL YEAR 1987		
Okanogan Project, Okanogan Irrigation District, Washington. - Work will complete on rehabilitation of the pressure pipeline system and modification of the headworks and concrete canal lining.	1/	$1,000,000
Shoshone Project, Heart Mountain Division, Wyoming. - Rehabilitation work will continue.		750,000
Strawberry Valley Project, Utah. - Work will continue on replacement of the Spanish Fork Diversion structure and repair of Strawberry Power Canal.	2/	853,000
Sun River Project, Fort Shaw Division, Montana. - Rehabilitation of canals, laterals, and structures will continue.	3/	380,000
Uncompahgre Project, Colorado. - Rehabilitation of canals and conduits will continue.		664,000
TOTAL PROGRAM		$3,647,000
Federal Obligations (Reclamation)		$3,647,000
Non-Federal Participation:		
Non-Cash (Services)		343,571

1/ Excludes $149,571 non-Federal noncash participation.
2/ Excludes $170,000 non-Federal noncash participation.
3/ Excludes $24,000 non-Federal noncash participation.

REHABILITATION AND BETTERMENT PROGRAM

PF-40 (10-76)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS INCLUDED IN R&B CATEGORY PRIOR TO FY 1987					
Crooked River Project, Ochoco Irrigation District, Oregon	100,000	---	100,000	---	---
Grand Valley Project, Orchard Mesa Division, Colorado	2,809,767	2,760,767	49,000	---	---
Okanogan Project, Okanogan Irrigation District, Washington	9,935,777	7,578,777	1,357,000	1,000,000	---
Salt River Project, Roosevelt Water Conservation District, Arizona	100,000	---	100,000	---	---
Shoshone Project, Heart Mountain Division, Wyoming	5,500,000	3,585,288	750,000	750,000	414,712
Shoshone Project, Willwood Division, Wyoming	1,599,351	1,588,351	11,000	---	---
Strawberry Valley Project, Utah	7,651,000	3,931,785	2,352,000	853,000	514,215
Sun River Project, Fort Shaw Division, Montana	1,400,000	---	290,000	380,000	730,000
Sun River Project, Greenfields Division, Montana	8,299,146	8,293,146	6,000	---	---
Uncompahgre Project, Colorado	5,640,000	3,281,817	961,000	664,000	733,183
Yakima Project, Yakima-Tieton Irrigation District, Colorado	62,315,985	60,471,985	1,834,000	---	10,000
Total Obligations (Reclamation)	$105,351,026	$91,491,916	$7,810,000	$3,647,000	$2,402,110
Method of Financing:					
Appropriations available and required	---	---	$5,493,000	$3,647,000	$2,402,110
Application of prior year funds	---	---	652,000	---	---
Non-Federal participation:					
Services in lieu of cash 1/	(14,034,600)	(12,326,927)	(1,128,554)	(343,571)	(235,548)
Underfinancing	---	---	1,665,000	---	---

1/ Amounts shown are additive to amounts by projects and total oblitayions (Reclamation).

GPO 831-180

Appropriation Title: Construction Program
Construction and Rehabilitation

SAFETY OF DAMS PROGRAM

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$ 27,895,000	
Application of Prior Year Funds	3,267,016	
Non-Federal Participation - Cash	100,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	a/	
Total Obligations, FY 1986		$31,262,016
Fiscal Year 1987:		
Estimate of Appropriation	$ 38,458,000	
Non-Federal Participation - Cash	90,000	
Total Obligations, FY 1987		$38,548,000

Description: The Safety of Dams Program implements the intent of "Reclamation Safety of Dams Act of 1978" (Public Law 95-578, as amended by Public Law 98-404). The Act grants authority to undertake necessary actions to provide for the safety of existing dams and related facilities under the jurisdiction of the Bureau of Reclamation. The 1984 amendments to the Act raised the appropriation ceiling from the original $100 million to $750 million for authorized work. The total estimated cost of work currently proposed is $528,676,614, while the current obligations through fiscal year 1987 totals $130,398,116. The Bureau has control over some 240 reservoirs impounded by more than 310 dams and dikes. There are 275 Bureau dams included in the Safety Evaluation of Existing Dams program, which includes 7 privately owned dams that have become a part of Bureau projects by previous legislation. It is important that these structures be maintained and operated to present the least possible hazard to life and property while fulfilling project goals.

The program for fiscal year 1987 provides for continuing reconstruction and construction work on 10 dams. They are: Fruitgrowers Dam Project, Fruitgrowers Dam, Colorado; Minidoka Project, Jackson Lake Dam, Idaho-Wyoming; Newton Project, Newton Dam, Utah; Lewiston Orchards Project, Soldiers Meadow Dam, Idaho; P-SMBP, Pactola Dam, South Dakota; P-SMBP, Heart Butte Dam, North Dakota; Seedskadee Project, Fontenelle Dam, Wyoming; Salt River Project, Stewart Mountain Dam, and Modified Roosevelt Dam (in conjunction with the Central Arizona Project), Arizona; and W.C. Austin Project, Altus Dam, Oklahoma. In addition, the fiscal year 1987 program provides for initiating corrective work on up to six dams which are: Cachuma Project, Bradbury Dam; Central Valley Project, Little Panoche Dam, Los Banos Dam, and O'Neill Dam; Ventura River Project, Casitas Dam; all of which are in California, and Newlands Project, Lake Tahoe Dam in California-Nevada.

Appropriation Title: Construction Program
Construction and Rehabilitation
Safety of Dams Program - 2

Modification work will be completed on three dams during fiscal year 1987. They are Pactola Dam, Fruitgrowers Dam, and Soldiers Meadow Dam.

The Bureau of Reclamation coordinates the Department of the Interior Dam Safety Program, which includes advising and assisting other Interior agencies in operating their dam safety programs and for coordinating the Department of the Interior program with the Federal Emergency Management Agency.

Funds for examination of dams and analytical activities on projects to determine the need for modification are provided through the Examination of Existing Structures program.

---

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman) funding for this activity in FY 1986 will be reduced by $891,605. This total amount will be distributed uniformly to each line item at the rate of 4.8 percent after underfinancing has been assigned. The impact of the FY 1986 reduction to the individual project completions or the funding estimate to complete them has not been adjusted in the FY 1987 Budget Justifications.

Appropriation Title: Construction Program
Construction and Rehabilitation
Safety of Dams Program - 3

FISCAL YEAR 1987

Work Proposed	Program
PROJECTS UNDER CONSTRUCTION	
ONGOING PROJECTS:	
Fruitgrowers Dam Project, Colorado. - Construction will be completed on the new spillway.	207,000
Lewiston Orchards Project, Soldiers Meadow Dam, Idaho. - Construction work on modification of the dam embankment and spillway to pass the inflow design flood will be completed.	425,000 1/
Minidoka Project, Jackson Lake Dam, Idaho-Wyoming. - The second phase contract for stabilizing the dam by strengthening the embankment and foundation materials and the contract for furnishing outlet gates will be awarded and the first phase contract will be completed.	14,770,000
Newton Project, Newton Dam, Utah. - The contract for modification of the service and the emergency spillway will be awarded.	2,543,000
Pick-Sloan Missouri Basin Program, Heart Butte Unit, Heart Butte Dam, North Dakota. - Prime contract for construction of an emergency spillway will continue. Contracts will be awarded for relocating utilities and rebuilding roads and roadway structures.	2,540,000
Pick-Sloan Missouri Basin Program, Rapid Valley Unit, Pactola Dam, South Dakota. - Modification work on the dam and spillway will be completed.	1,463,000
Salt River Project, Stewart Mountain Dam, Arizona. - Preconstruction activities will continue.	2,291,000
W.C. Austin Project, Altus Dam Oklahoma. - A contract will be awarded for construction of the parapet wall and for dike modifications. The contracts for furnishing and installing the hydrometerological data gathering system and the warning system will be completed.	1,400,000

Appropriation Title: Construction Program
Construction and Rehabilitation
Safety of Dams Program - 4

FISCAL YEAR 1987

Work Proposed	Program
Salt River Project, Central Arizona Project, Plan 6, Arizona. - Preconstruction activities will continue on Modified Roosevelt Dam.	$(1,147,000) 2/
Seedskadee Project, Fontenelle Dam, Wyoming. - A contract for remedial work for correction of seepage and settlement problems will be awarded. Rehabilitation work is not fully defined at present but is contingent upon Test Section results. Preliminary indications show that the modification work may consist of constructing a concrete diaphragm wall or other form of concrete cutoff through the dam embankment with additional grouting as required.	6,100,000
Modification Reports and Preconstruction Activity. - Provides for corrective action studies, preparation of modification reports, preconstruction activities including design and preparation of contract specifications, special studies, interim protective measures, and modifications not exceeding $750,000.	5,859,000

INITIATE CORRECTIVE ACTION:

Pending outcome of Administration and Congressional reviews, funding will be allocated for the initiation of construction on additional high priority project modifications. Potential candidates are:	$ 500,000

Cachuma Project, Bradbury Dam - California.

Central Valley Project, San Luis Unit, Little Panoche Dam - California.

Central Valley Project, San Luis Unit, Los Banos Dam - California.

Central Valley Project, San Luis Unit, O'Neill Dam - California.

Newlands Project, Lake Tahoe Dam - California-Nevada.

Ventura River, Casitas Dam - California.

Appropriation Title: Construction Program
Construction and Rehabilitation
Safety of Dams Program - 5

FISCAL YEAR 1987

Work Proposed	Program
ADDITIONAL SAFETY OF DAMS WORK NOT INCLUDED UNDER SAFETY OF DAMS ACT	
Department Dam Safety Program. Work would continue the coordination and management of the Department of the Interior Dam Safety Program. Program activities include preparation of Departmental policy and guidelines, maintenance of data base information required by the Federal Guidelines for Dam Safety, research applicable to DOI dams, and assistance to other Department of the Interior agencies in administering their dam safety programs.	450,000
TOTAL PROGRAM	$ 38,548,000
Federal Obligations (Reclamation)	$ 38,458,000
Non-Federal Participation:	
Cash	90,000

1/ Includes $90,000 in non-Federal cash contributions.

2/ Funding is being requested as part of the Central Arizona Project, Safety of Dams Division.

SAFETY OF DAMS PROGRAM - 1

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS PERFORMED UNDER AUTHORITY OF PUBLIC LAW 95-578 (Appropriation Ceiling $100,000,000)					
COMPLETED SOD CONSTRUCTION					
Milk River Project, Lake Sherburne Dam, Montana . .	$ 3,503,974	$ 3,503,974	$ ---	$ ---	$ ---
North Platte Project, Guernsey Dam, Wyoming	557,108	557,108	---	---	---
Sun River Project, Willow Creek Dam, Montana	243,894	243,894	---	---	---
Subtotal - Completed SOD Construction	$ 4,304,976	$ 4,304,976	---	---	---
INACTIVE SOD PROJECTS					
Boise Project, Black Canyon Dam, Idaho	$ 360,717	$ 360,717	$ ---	$ ---	$ ---
Hyrum Project, Hyrum Dam, Utah	733,273	733,273	---	---	---
Orland Project, East Park Dam, California	58,072	58,072	---	---	---
Subtotal - Inactive SOD Projects	$ 1,152,062	$ 1,152,062	$ ---	$ ---	$ ---

SAFETY OF DAMS PROGRAM - 2

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS UNDER DESIGN AND/OR CONSTRUCTION					
Fruitgrowers Dam Project, Colorado	$ 2,031,492	$ 491,492	$ 1,333,000	$ 207,000	$ ---
Minidoka Project, Island Park Dam, Idaho	6,305,699	6,295,699	10,000	---	---
Minidoka Project, Jackson Lake Dam, Idaho-Wyoming .	1/ 3,977,991	3,977,991	---	---	---
Newlands Project, Lahontan Dam, Nevada	6,362,655	6,223,655	139,000	---	---
Newton Project, Newton Dam, Utah	3,043,000	36,668	163,000	2,543,000	300,332
Orland Project, Stony Gorge Dam, California	3,157,915	2,961,915	196,000	---	---
P-SMBP, Heart Butte Unit, Heart Butte Dam, No. Dak.	4,500,000	374,564	960,000	2,540,000	625,436
P-SMBP, Rapid Valley Unit, Pactola Dam, So. Dak. .	9,404,641	2,781,641	5,160,000	1,463,000	---
Rapid Valley Project, Deerfield Dam, South Dakota .	6,917,221	6,867,221	50,000	---	---
Salt River Project, Stewart Mountain Dam, Arizona .	1/ 445,721	445,721	---	---	---
Sun River Project, Gibson Dam, Montana	3,316,265	3,313,265	3,000	---	---
W. C. Austin Project, Altus Dam, Oklahoma	2,700,000	69,782	430,000	1,400,000	800,218
Subtotal - Projects Under Construction	$52,162,600	$33,839,614	$ 8,444,000	$ 8,153,000	$ 1,725,986
Modification Reports and Preconstruction Activity . .	25,668,188	12,642,526	1,763,000	1,740,000	9,522,662
Subotal - Public Law 95-578	$77,830,788	$46,482,140	$10,207,000	$ 9,893,000	$11,248,648
PROJECTS PERFORMED UNDER AUTHORITY OF PUBLIC LAW 98-404 (Amendments to Public Law 95-578, Appropriation Ceiling $650,000,000)					
PROJECTS UNDER DESIGN AND/OR CONSTRUCTION					
Cachuma Project, Bradbury Dam, California	$ 5,000,000	$ ---	$ ---	$ 90,000	$ 4,910,000
CRSP, Navajo Unit, Navajo Dam, New Mexico	3,536,000	---	2/ 3,536,000	---	---
CVP, San Luis Unit, Little Panoche Dam, California	382,500	---	---	40,000	342,500
CVP, San Luis Unit, Los Banos Dam, California . . .	360,000	---	---	40,000	320,000
CVP, San Luis Unit, O'Neill Dam, California	1,350,000	---	---	60,000	1,290,000
Lewiston Orchards Project, Soldiers Meadow Dam, Idaho	3/ 1,125,000	---	700,000	425,000	---
Minidoka Project, Jackson Lake Dam, Idaho-Wyoming .	1/ 78,022,991	2,879,413	8,222,413	14,770,000	52,150,183

1/ Part of each of these projects is included within the appropriation ceiling by Public Law 95-578 and the remainder of the project is included under Public Law 98-404.

2/ It has been decided that this work should be performed under the CRSP O&M program and to fund it with revenues from the CRSP revolving fund. The appropriated funds of $3,536,000 in FY 1986 will be transferred to other construction work.

3/ Non-Federal participation included: $100,000 in FY 1986 and $90,000 in FY 1987.

SAFETY OF DAMS PROGRAM - 3

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PUBLIC LAW 98-404 (Amendments to Public Law 95-578) - Continued					
PROJECTS UNDER DESIGN AND/OR CONSTRUCTION					
Newlands Project, Lake Tahoe Dam, California-Nevada	610,000	---	---	180,000	430,000
Salt River Project, Stewart Mountain Dam, Arizona . .	1/ 43,755,279	553,384	1,775,000	2,291,000	39,135,895
Seedskadee Project, Fontenelle Dam, Wyoming	52,000,000	---	500,000	6,100,000	45,400,000
Ventura River Project, Casitas Dam, California . . .	3,000,000	---	---	90,000	2,910,000
Subtotal - Design and Construction	$189,140,788	$ 3,432,797	$14,733,413	$24,026,000	$146,883,578
Modification Reports and Preconstruction Activity . .	31,248,000	5,387,101	5,758,603	4,119,000	15,983,296
Subtotal - Public Law 98-404	4/ $220,388,788	$ 8,819,898	$20,492,016	$28,205,000	$162,871,874
Central Arizona Project, Plan 6 - Arizona: 5/					
Theodore Roosevelt Dam, Salt River, Arizona	(84,524,000)	---	(4,000,000)	(1,147,000)	(79,377,000)
Cliff Dam, Arizona	(141,476,000)	---	---	---	(141,476,000)
ADDITIONAL SAFETY OF DAM WORK NOT INCLUDED UNDER SAFETY OF DAMS ACT					
Department of the Interior Dam Safety Program	$ 4,625,000	$ 1,810,884	$ 563,000	$ 450,000	$ 1,801,116
Non-Federal Participation	- 190,000	---	- 100,000	- 90,000	---
Total Obligations (Reclamation).	$308,111,614	$ 62,569,960	$31,162,016	$38,458,000	$175,921,638
Method of Financing:					
Appropriations available and required	$ ---	$ ---	$16,595,000	$38,458,000	$175,921,638
Application of prior year funds	---	---	3,267,016	---	---
Underfinancing	---	---	11,300,000	---	---
Non-Federal Participation:					
Cash	---	---	(100,000)	(90,000)	---

4/ This figure does not include funds estimated to perform dam safety work on Roosevelt and Cliff Dams. Funding for the dam safety work associated with those dams (Total Estimate, $226,000,000) is being requested as part of the Central Arizona Project (CAP), in Safety of Dams Division, but it will apply towards the ceiling authorized by Public Law 98-404. Thus, the total estimated costs for dams identified in the Safety of Dams Program applied towards the appropriations ceiling of Public Law 98-404 is $446,388,788.

5/ Because work on these project features serve more than a single function, there is no feasible way to allocate costs specifically for dam safety to the various contract work items. Consequently, funding is requested as a part of the CAP Safety of Dams Division although the costs of these features accrue against the SOD ceiling (see footnote #4).

COLORADO RIVER STORAGE PROJECT
UPPER COLORADO RIVER BASIN FUND

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

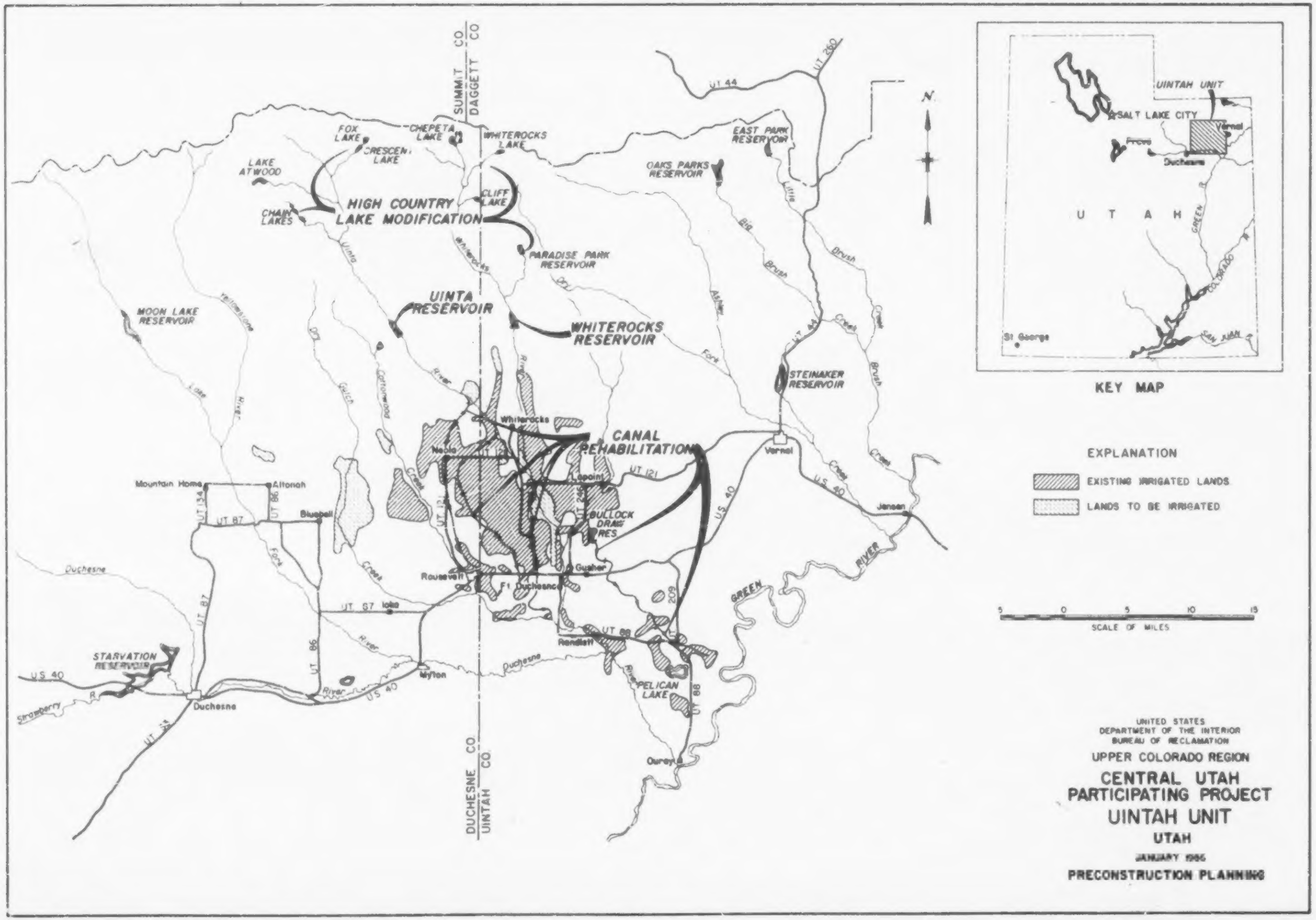
SUMMARY OF PRECONSTRUCTION ACTIVITY PROGRAM, FY 1986 and FY 1987

Project	FY 1986 program	FY 1987 program
Participating Projects:		
Uintah Unit, Central Utah Project	$250,000	$100,000
TOTAL PROGRAM	250,000	100,000
Method of Financing:		
Appropriation available or required	250,000	100,000
TOTAL FINANCING	$250,000	$100,000

Purpose of Program: Dependable water supplies are urgently needed in the Upper Colorado River Basin area to expand municipal and industrial water supply systems to meet the needs of population growth, to stabilize irrigated agriculture, to control flood flows, and to supply fish and wildlife and recreation benefits.

During the Preconstruction Activity phase, work will consist of final data collection, geologic studies, material testing, and preparation of final designs and specifications. It also provides for negotiations with local interest leading to execution of repayment contracts prior to the initiation of construction. There will be little planning work performed in this phase as most of it will have been completed in the Advance Planning phase.

The preconstruction activity presentation by project appears on the following pages.


SUMMIT CO.
DAGGETT CO.
DUCHESNE CO.
UINTAH CO.
FOX LAKE
CHEPETA LAKE
CRESCENT LAKE
WHITEROCKS LAKE
LAKE ATWOOD
HIGH COUNTRY LAKE MODIFICATION
CLIFF LAKE
CHAIN LAKES
PARADISE PARK RESERVOIR
EAST PARK RESERVOIR
OAKS PARKS RESERVOIR
UINTA RESERVOIR
WHITEROCKS RESERVOIR
MOON LAKE RESERVOIR
STEINAKER RESERVOIR
CANAL REHABILITATION
BULLOCK DRAW RES.
STARVATION RESERVOIR
PELICAN LAKE
Whiterocks
Neola
Lapoint
Mountain Home
Altonah
Bluebell
Roosevelt
Ft. Duchesne
Gusher
Ioka
Myton
Randlett
Ouray
Duchesne
Vernal
Jensen
UT 44
UT 260
UT 121
UT 134
UT 86
UT 87
UT 246
UT 88
UT 209
UT 33
US 40
Duchesne River
Strawberry R.
Uinta River
Whiterocks River
Yellowstone
Lake Fork
Dry Gulch Creek
Cottonwood
Ashley Fork
Big Brush
Brush Creek
GREEN RIVER
N.
UINTAH UNIT
SALT LAKE CITY
Provo
Duchesne
Vernal
U T A H
GREEN R.
COLORADO R.
SAN JUAN R.
St. George
KEY MAP
EXPLANATION
▨ EXISTING IRRIGATED LANDS
░ LANDS TO BE IRRIGATED
5 0 5 10 15
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
CENTRAL UTAH
PARTICIPATING PROJECT
UINTAH UNIT
UTAH
JANUARY 1966
PRECONSTRUCTION PLANNING

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE PRECONSTRUCTION ACTIVITY CENTRAL UTAH PARTICIPATING PROJECT, UINTAH UNIT, UTAH	**Completion Date** 1/	**% Complete** 1/	**Date** 1/31/86
AUTHORIZATION Public Law 94-423, September 28, 1976	**BENEFIT COST RATIOS**		
	Based on Direct Benefits	**Based on Total Benefits**	**Date**
LAND CERTIFICATION Scheduled for December 1987 — **DEFINITE PLAN REPORT** Scheduled for Approval September 1987	2/ 1.3	2/ 1.4	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	13/	$155,284,000
Recreational Fish and Wildlife Net Property and Other Transfers:	3/ 13/	3,485,000
Federal Participation		1,126,000
Non-Federal Participation		---
Adjustment 4/		957,000
Total to be Allocated		$160,852,000

Allotments to September 30,	1985		$ 5,737,708
Allotments for FY	1986	a/	250,000
Allotments to Date			5,987,708
Allotments Required for FY	1987		100,000
Balance to Complete after FY	1987		$149,196,292

ALLOCATIONS 5/

Irrigation		$ 84,462,000
Power		---
M & I Water	6/	4,084,000
Recreation		3,274,000
F & WL		67,468,000
Flood Control		1,564,000
Other		
Total		$160,852,000

REPAYMENT

Amount Repaid by Irrigators	7/	$ 4,650,000
Amount Repaid by Power		
Amount Repaid by M.& I Water	7/	2,690,000
Amount Repaid by UCRBF Rev. 8/		71,375,000
CRDF 9/		246,000
Ad Valorem Tax		1,385,000
Amt. deferred - Leavitt Act 10/		8,200,000
Nonreimbursable 11/		72,306,000
Total		$160,852,000

AMOUNTS PER ACRE

Irrig. Invest. per Acre	$1,258
Repayment of Investment per Acre:	
By Irrigators	69
By Power Revenues	
By M & I Water Users	
By UCRBF Rev.	1,063
By CRDF	4
Deferred under Leavitt Act	122

Payment Capacity per Acre	$4.40
Annual Charges:	
O & M	0.60
Construction	3.80
Total	$4.40

STATUS OF REPAYMENT CONTRACT: Repayment contract with Central Utah Water Conservancy District scheduled for execution November 1987, validation December 1987.

STATUS OF NEPA COMPLIANCE: Projectwide environmental statement was filed with Environmental Protection Agency, draft July 19, 1978, revised draft scheduled November 1986, while the final is scheduled for August 1987.

DESCRIPTION: The project is located in Duchesne and Uintah Counties near Roosevelt in northeastern Utah. This is a multipurpose project which will provide a full water supply to approximately 7,820 acres of Indian lands and a supplemental supply to 34,160 acres of Indian lands and 25,150 acres 12/ of non-Indian lands. It would provide a firm supply of 1,000 acre-feet for municipal and industrial purposes. Benefits for recreation, fish and wildlife, and flood control will also result. Crops presently grown are alfalfa, pasture, and small grains mainly to support the production of livestock, consisting of dairy cattle, beef cattle, and sheep. It is anticipated that with project water, livestock production would be expanded as well as the livestock feeds.

PROJECT DATA SHEET - 2
Central Utah Participating Project, Uintah Unit, Utah

OTHER INFORMATION: Funds to initiate preconstruction activity were appropriated in fiscal year 1976. The data in this PF-65 are based on the plan presented in the August 1978 draft Definite Plan Report. However, since that time, preconstruction drilling has disclosed geological problems with both damsites, and preconstruction studies have shown the authorized plan is no longer engineering/economically justified. Planning efforts are now directed toward accomplishing the studies as set forth in the November 9, 1982 agreement entitled "Interim Exploration and Planning Agreement Regarding Ute Water Resources" between the Bureau of Reclamation and the Ute Tribal Business Committee. Status Report No. 1 was presented to the Ute Tribal Business Committee on June 30, 1983. The Bureau is awaiting comments from the Tribe. Negotiations are now underway between the Secretary of the Interior and the Ute Indian Tribe to evaluate alternatives to meet terms of the 1965 Deferral Agreement.

Footnotes:

1/ Preconstruction activity is scheduled to be completed in fiscal year 1987. The 1-year delay from the fiscal year 1986 Budget Justification is required to meet additional commitments made to the Ute Indian Tribe. Construction is estimated to require 5 years.

2/ No change in ratios as projected in the fiscal year 1986 Budget Justification. The ratios were computed by using the authorized interest rate of 3.25 percent.

3/ Includes $211,000 specific fish and wildlife cost and $3,274,000 specific recreation costs.

4/ Reimbursable interest during construction.

5/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 81,678,000	$ 84,462,000
Municipal and Industrial Water	3,939,000	4,084,000
Recreation	3,271,000	3,274,000
Fish and Wildlife	65,233,000	67,468,000
Flood Control	1,513,000	1,564,000
Total	$155,634,000	$160,852,000

Increase of $5,218,000 is due to indexing.

Footnotes: (continued)

6/ Includes $957,000 interest during construction.

7/ The scheduled amount to be repaid will be covered by contracts with project beneficiaries before construction is initiated.

8/ From Upper Colorado River Basin Fund revenues apportioned to the State of Utah.

9/ Includes $237,000 for irrigation costs and $9,000 for municipal and industrial water costs.

10/ Amount for costs allocated to Indian irrigation. The Leavitt Act permits repayment to be deferred as long as the land is in Indian ownership.

11/ Includes $1,564,000 for flood control, $67,468,000 for fish and wildlife, and $3,274,000 for recreation.

12/ Reflects total irrigable acreage that can receive project water. Water available will only serve 11,000 acres of irrigable land. Allocation of water to project lands has not been accomplished.

13/ Appropriations authorized are $164,285,000 (October 1986) under Public Law 94-423. This authorization is adequate to cover the project as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $10,750, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

CENTRAL UTAH PARTICIPATING PROJECT - UINTAH UNIT, UTAH
PRECONSTRUCTION ACTIVITY - 4

Summarized Financial Data:

Total estimated preconstruction program		$6,087,708
Obligations as of September 30, 1985	$5,737,708	
FY 1986 program	250,000	
FY 1987 program	100,000	
Balance to complete after September 30, 1987	--- 1/	

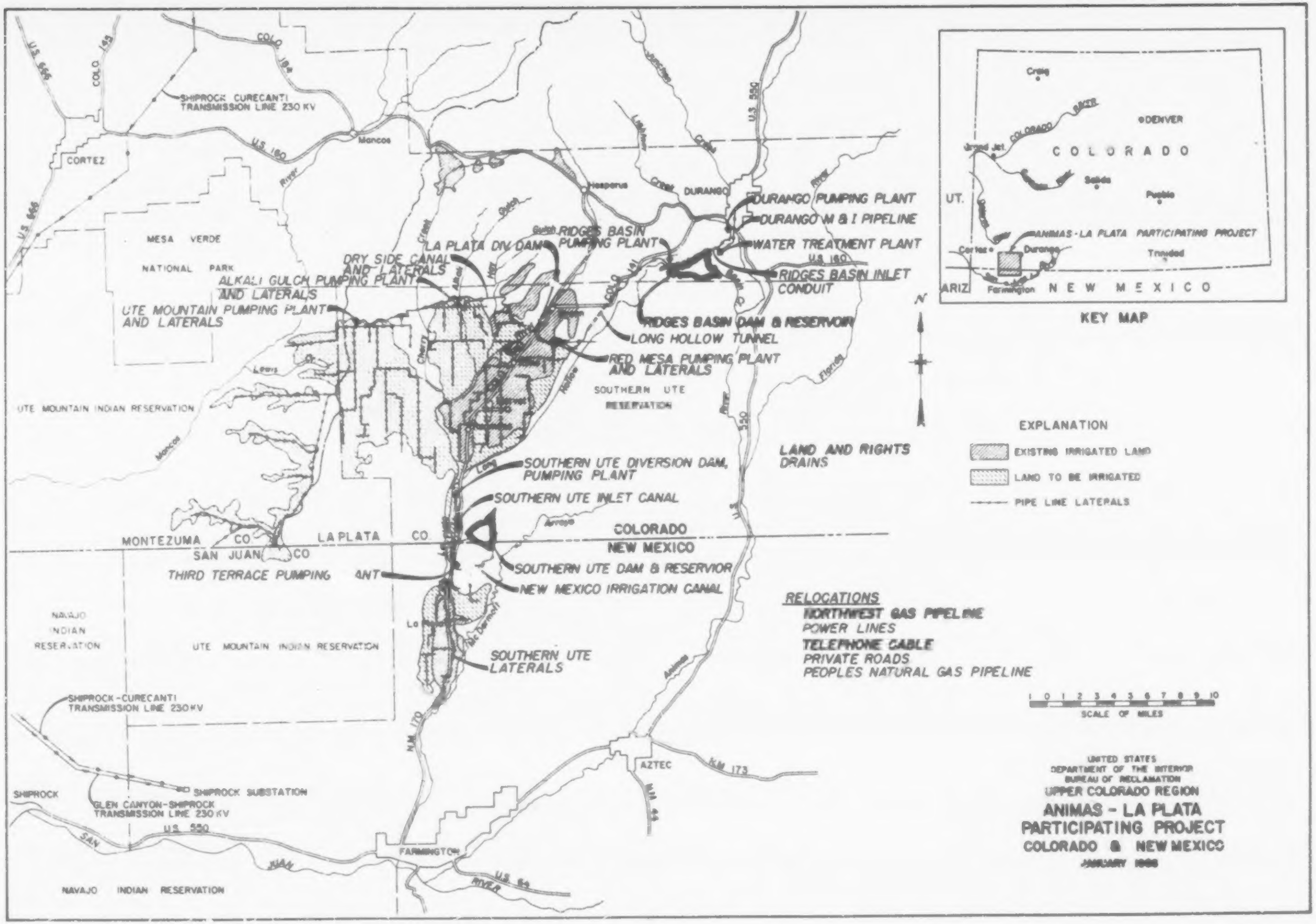
Justification: A dependable water supply is needed in this economically depressed area. Many of the economic difficulties in the project area stem from the area's dependency on the livestock industry and the lack of sufficient irrigation water for production of adequate feed supplies for livestock. The unemployment rate in the project area is extremely high particularly for the Indians who form a large percent of the local population. Project water would help the agricultural development and improve the economic and social conditions of the Indians. The city of Roosevelt, Utah, has a need for additional municipal and industrial water for future growth. Part of the storage in the project reservoirs would replace irrigation storage presently provided by 13 upstream mountain reservoirs. This would permit these lakes to be stabilized and further developed for fish and wildlife and recreation use, which in turn will increase tourism trade in the project area. The project will virtually eliminate flooding of agricultural lands, allowing for earlier planting on lands which were previously inundated by spring floods and subjected to loss by frequent changes in stream channels.

The unit is actively supported by Utah State Department of Natural Resources, Central Utah Water Conservancy District, Uintah Water Conservancy District, Utah Division of Wildlife Resources, Indian interest, irrigation companies, and local landowners.

FISCAL YEAR 1987

Work Proposed	Program
The program provides for completion of preconstruction activities including preparation of environmental statement, Definite Plan Report, preparation of specification designs and estimates, and repayment contract negotiations.	$100,000
TOTAL	$100,000

1/ Preconstruction activity is scheduled to be completed in September 1987.


SHIPROCK CURECANTI TRANSMISSION LINE 230 KV
COLO. 145
COLO. 184
U.S. 666
U.S. 160
CORTEZ
Mancos
MESA VERDE NATIONAL PARK
Hesperus
DURANGO
U.S. 550
DURANGO PUMPING PLANT
DURANGO M & I PIPELINE
WATER TREATMENT PLANT
RIDGES BASIN INLET CONDUIT
RIDGES BASIN PUMPING PLANT
LA PLATA DIV DAM
DRY SIDE CANAL AND LATERALS
ALKALI GULCH PUMPING PLANT AND LATERALS
UTE MOUNTAIN PUMPING PLANT AND LATERALS
RIDGES BASIN DAM & RESERVOIR
LONG HOLLOW TUNNEL
RED MESA PUMPING PLANT AND LATERALS
SOUTHERN UTE RESERVATION
UTE MOUNTAIN INDIAN RESERVATION
SOUTHERN UTE DIVERSION DAM, PUMPING PLANT
SOUTHERN UTE INLET CANAL
LAND AND RIGHTS
DRAINS
MONTEZUMA CO
LA PLATA CO.
SAN JUAN CO
COLORADO
NEW MEXICO
THIRD TERRACE PUMPING PLANT
SOUTHERN UTE DAM & RESERVIOR
NEW MEXICO IRRIGATION CANAL
RELOCATIONS
NORTHWEST GAS PIPELINE
POWER LINES
TELEPHONE CABLE
PRIVATE ROADS
PEOPLES NATURAL GAS PIPELINE
NAVAJO INDIAN RESERVATION
UTE MOUNTAIN INDIAN RESERVATION
SOUTHERN UTE LATERALS
SHIPROCK-CURECANTI TRANSMISSION LINE 230 KV
SHIPROCK
SHIPROCK SUBSTATION
GLEN CANYON-SHIPROCK TRANSMISSION LINE 230 KV
U.S. 550
SAN JUAN RIVER
FARMINGTON
U.S. 64
AZTEC
N.M. 173
N.M. 44
N.M. 170
N
Craig
DENVER
Grand Jct
COLORADO RIVER
COLORADO
Salida
Pueblo
UT.
Cortez
Durango
ANIMAS - LA PLATA PARTICIPATING PROJECT
Trinidad
ARIZ.
Farmington
NEW MEXICO
KEY MAP
EXPLANATION
EXISTING IRRIGATED LAND
LAND TO BE IRRIGATED
PIPE LINE LATERALS
1 0 1 2 3 4 5 6 7 8 9 10
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
ANIMAS - LA PLATA
PARTICIPATING PROJECT
COLORADO & NEW MEXICO
JANUARY

REGION Upper Colorado	**PROJECT DATA SHEET**		PF- 65 (2-84) Bureau of Reclamation

PROJECT AND STATE ANIMAS-LA PLATA PARTICIPATING PROJECT, COLORADO-NEW MEXICO	**Completion Date** 1/ 1997	**% Complete** 0	**Date** 1/31/86
AUTHORIZATION Public Law 90-537, September 30, 1968	**BENEFIT COST RATIOS**		
	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION January 19, 1982 — **DEFINITE PLAN REPORT** Approved August 18, 1980	2/ 1.4	2/ 1.5	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	18/	$314,608,000
Total Federal Oblig. (Other)	3/	10,557,000
Recreational-Fish and Wildlife	4/	15,955,000
Net Property and Other Transfers:		
Federal Participation		2,100,000
Non Federal Participation	5/	250,024,500
Adjustment	6/	25,940,500
Total to be Allocated		$619,185,000

Allotments to September 30,1985	$ 4,218,231
Allotments for FY 1986	
Allotments to Date	4,218,231
Allotments Required for FY 1987	1,000,000
Balance to Complete after FY 1987	$309,389,769

ALLOCATIONS 7/	
Irrigation	$413,580,000
Power	
M & I Water 8/	156,758,000
Recreation	9,611,000
F & WL	19,660,000
Flood Control	
Other 9/	19,576,000
Total	$619,185,000

REPAYMENT	
Amount Repaid by Irrigators 10/	4,130,000
Amount Repaid by Power	
Amount Repaid by M & I Water 10/ 11/	156,484,000
Ad Valorem Tax Revenues 10/ 12/	9,433,000
Amount Repaid by UCRBF Rev 10/ 13/	398,173,000
Contributed Funds 10/ 14/	254,000
CRDF 15/	654,000
Am. deferred under Leavitt 16/	1,210,000
Nonreimbursable 10/ 17/	48,847,000
Total	$619,185,000

AMOUNTS PER ACRE

Irrig. Invest. per Acre	$6,131
Repayment of Investment per Acre:	
By Irrigators	61
By Power Revenues	0
By M & I Water Users	0
By CRDF&Cont Funds	9
Indian Irrigation	18
By UCRBF Rev.	5,903
Ad Valorem Tax	140

Payment Capacity per Acre	$34.00
Annual Charges:	
O & M	30.00
Construction	4.00
Total	$34.00

STATUS OF REPAYMENT CONTRACT: In accordance with P.L. 99-88, binding agreements with non-Federal entities desiring to participate in project construction, scheduled for completion in June 1986. Repayment with Animas-La Plata Water Conservancy District, Colorado, and with La Plata Conservancy District, New Mexico, scheduled for execution November 1986; validation December 1986. Repayment contracts with Indian tribes scheduled for execution January 1987.

STATUS OF NEPA COMPLIANCE: Projectwide final Environmental Impact Statement was filed with Environmental Protection Agency July 1, 1980.

DESCRIPTION: The project is located in Montezuma and La Plata Counties of southwestern Colorado and in San Juan County of northwestern New Mexico. This is a multipurpose project which will provide 80,100 acre-feet annually of municipal and industrial (M&I) water supplies with new M&I water supplies allocated for the Navajo Tribal Utility Authority 7,600, the Ute Mountain Ute Indians 6,000, and the Southern Utes 26,500. Water will also be provided for Durango, Colorado, 8,200; and for the New Mexico communities of Farmington 19,700; LaPlata 1,000; Aztec 5,800 and Bloomfield 5,300. The project will provide a full water supply for the irrigation of 11,980 acres of Ute Mountain Ute Indian land, 31,500 acres of non-Indian land in Colorado, 1,800 acres of Southern Ute Indian Reservation land; and 4,530 acres of non-Indian land in New Mexico. A supplemental supply will be provided for 17,650 acres of presently irrigated land. Benefits will also result from recreation, and F&W. The crops presently grown are alfalfa, pasture, and small grains. It is anticipated that with project water, the trend would be toward more intensive farming and the production of cash crops and dairy products.

PROJECT DATA SHEET - 2
Animas-La Plata Participating Project, Colorado-New Mexico

OTHER INFORMATION: Funds to begin advance planning were appropriated in FY 1971.

Footnotes:

1/ Initial delivery of 46,600 acre-feet of municipal and industrial water is scheduled for FY 1996. Completion of this project is estimated to require 12 years. Drains will be completed thereafter as needed.

2/ The FY 1987 budget represents first presentation of this project. The ratios were computed by using the authorized interest rate of 3.25 percent. The benefit-cost ratio includes interest during construction on both Federal and non-Federal contributions.

3/ Includes cost of Department of Energy transmission lines.

4/ Includes specific recreation costs of $9,611,000 and specific fish and wildlife mitigation costs of $6,344,000.

5/ Contributions for advance planning of $24,500 made by: Colorado Water Conservation Board, $10,000; Southwest Water Conservation District, $7,500; city of Durango, $2,000; La Plata County, $2,000; La Plata Water Conservancy District, Colorado, $1,850; La Plata Conservancy District, New Mexico, $650; the Southern Ute Tribe, $500; contract negotiations are underway with project sponsors. The breakdown of the $250,000,000 estimated non-Federal participation between cash and repayment will be determined through the negotiation process.

6/ Reimbursable interest during construction at 10.898 percent for municipal and industrial water facilities for the Indian tribes. No interest during construction for non-Indian M&I facilities is included because of anticipated up-front financing from Colorado and New Mexico.

7/ The FY 1987 budget represents first presentation of this project.

8/ Includes $25,940,500 reimbursable interest during construction.

9/ For nonreimbursable cultural resource activities (Public Law 96-301).

10/ Excludes any breakdown of non-Federal contributions by repayment purpose. When negotiations are complete on non-Federal contributions, all or some amounts are subject to major changes.

PROJECT DATA SHEET - 3
Animas-La Plata Participating Project, Colorado-New Mexico

Footnotes: (continued)

11/ The scheduled amount to be repaid will be covered by contracts with project beneficiaries before construction is initiated.

12/ Applied to irrigation repayment.

13/ Repaid from net power revenues contained in CRSP Power Rate Schedule (SP-F1) effective on or after January 23, 1981, Upper Colorado River Basin Fund Revenues, apportioned to State of Colorado, $351,428,000, and New Mexico, $46,745,000.

14/ Contributions includes $229,500 for General Investigations and $24,500 for Advance Planning which are allocated $146,000 for irrigation and $108,000 for municipal and industrial water.

15/ Nonreimbursable Colorado River Development Fund investigation costs of $654,000 which includes $488,000 for irrigation and $166,000 for municipal and industrial water.

16/ Amount for amortization capacity for Indian irrigation. The Leavitt Act (25 U.S.C. 386a.) permits repayment to be deferred as long as the land is in Indian ownership.

17/ Includes $9,611,000 for recreation facilities, $6,344,000 for fish and wildlife mitigation facilities, $13,316,000 for fish and wildlife enhancement and $19,576,000 for the Cultural Resources Activities (Public Law 96-301).

18/ Appropriations authorized are $1,347,815,000 (October 1986) for the Colorado River Storage Project under Public Law 90-537. The comparable Federal obligation is $1,287,671,000. This authorization is adequate to cover the project as proposed.

ANIMAS-LA PLATA PROJECT, COLORADO-NEW MEXICO

PHYSICAL DATA ON STRUCTURES - 4

CONSTRUCTION PROGRAM:

Ridges Basin Reservoir System

Ridges Basin Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 313 feet
Crest Length - 1,600 feet
Base Width - 1,670 feet

Spillway:
Type - Uncontrolled Overflow

Reservoir Capacity:
Total Storage - 280,000 acre-feet

Durango Pumping Plant

Pumping Plant:
Fifteen units (dual)   Total horsepower - 41,850
441 cubic feet per second

Ridges Basin Inlet Conduit

Conduits:	Length (miles)	Diameter (inches)	Capacity (Cubic feet per second)
Ridges Basin Inlet	2.1	102	430

Ridges Basin Delivery System

La Plata Diversion Dam:
Dam: - Type - Concrete ogee overflow
Structural Height - 9.5 feet
Overflow Crest Length - 50 feet
Diversion Capacity - 150 cfs

Ridges Basin Pumping Plant

Pumping Plant:
Ten units   Total horsepower - 38,300
700 cubic feet per second

Dry Side Canal:
Length - 24.3 miles   Capacity - 710 cubic feet per second

Long Hollow Tunnel:
Length 3.2 miles   Diameter - 10.5 feet   Capacity - 710 cubic feet per second

Durango M&I Pipeline

Pipelines:
Length - 3.1 miles   Diameter - 20 inches   Capacity - 11 cubic feet per second

ANIMAS-LA PLATA PROJECT, COLORADO-NEW MEXICO

PHYSICAL DATA ON STRUCTURES - 5

South Durango District M&I Pipeline

Pipelines:

Length - 7.8 miles Diameter - 6" - 18" Capacity - 6 cubic feet per second

Ridges Basin Irrigation System

Pumping Plants:	Units (number)	Total horsepower	Capacity (cubic feet per second)
Red Mesa	8	3,000	77
Alkali Gulch	5	1,100	45
Ute Mountain	6	1,650	56

Laterals

Four laterals with a combined length of 162.2 miles

Southern Ute Reservoir System

Southern Ute Dam and Reservoir

Dam:

Type - Zoned earthfill
Structural Height - 170 feet
Crest Length - 2,900 feet
Base width - 1,010 feet

Spillway
None

Reservoir capacity:
Total Storage - 70,000 acre feet

Southern Ute Diversion Dam:

Dam:

Type - Concrete ogee overflow
Structural Height - 8.5 feet
Overflow Crest Length - 100 feet

Southern Ute Inlet Canal

Canals:

Length - 3.3 miles Capacity - 375 cubic feet per second

Southern Ute Irrigation System

Pumping Plants:	Units (number)	Total Horsepower	Capacity (cubic feet per second)
Southern Ute	4	950	17
Third Terrace	4	750	30

ANIMAS-LA PLATA PROJECT, COLORADO-NEW MEXICO

PHYSICAL DATA ON STRUCTURES - 6

Canal:

New Mexico Irrigation - Length - 3.1 miles Capacity - 140 cubic feet per second

Laterals:

Two laterals with a combined length of 35.7 miles

Drains

Location and length to be determined by subsequent investigation.

Land and Rights

Quantity - 10,210 acres
Total Estimated Cost - $8,217,000
Cost per acre - $805
Acquisition - 0 percent complete as of September 30, 1985

Relocation

Total Estimated Cost - $13,552,000
Percent Complete - 0 percent as of September 30, 1985

Item:	Length (miles)	Total cost	Cost to September 30, 1985
Gas Pipelines and Related Facilities	10.8	12,542,000	- -
Transmission Lines	4.1	869,000	- -
Telephone Cable	1.5	124,000	- -
Private Roads	0.3	17,000	- -
TOTAL		$13,552,000	- -

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

ANIMAS-LA PLATA PARTICIPATING PROJECT, COLORADO - 7

FISCAL YEAR 1987

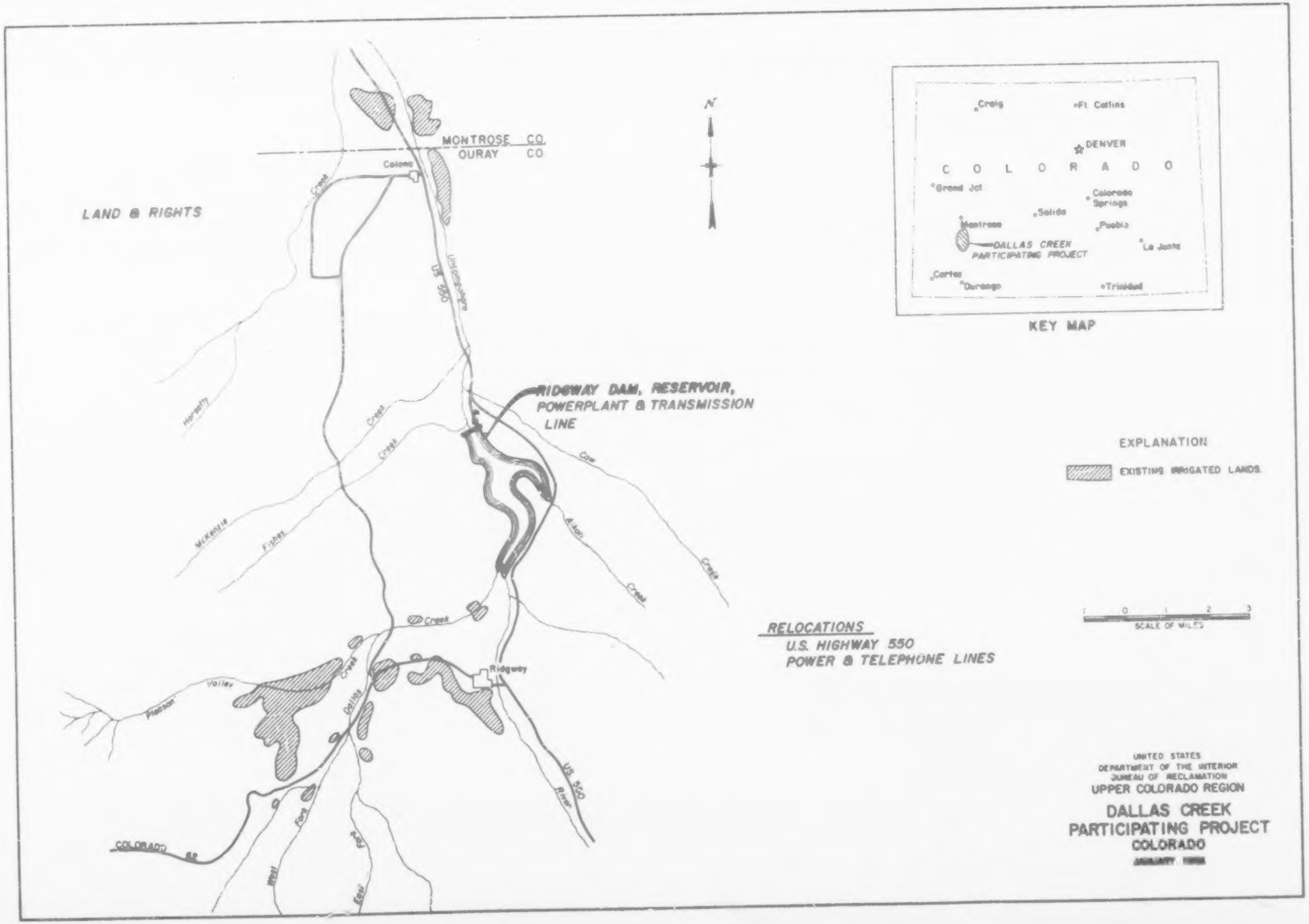
Work Proposed	Program
Ridges Basin Dam and Collection System - Provides for initiation of purchase of Ridges Basin land. Preconstruction activities for Ridges Basin Dam, will continue.	2,812,000
Ridges Basin Delivery System - Provides for preconstruction activities on Long Hollow Tunnel.	1,383,000
Service Facilities, Depreciation, and Salvage. - Provides for initiation of the Ridges Basin Field Station and acquisition of office and lab equipment as well as communications equipment.	520,000
Other Project Costs. - Provides for continuation of cultural resources program.	520,000
Non-Federal Contributions.	-4,235,000
TOTAL	$1,000,000

ANIMAS-LA PLATA PARTICIPATING PROJECT, COLORADO

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Ridges Basin Dam Collection System	$169,676,000	$1,591,934	$660,000	$2,812,000	$164,612,066
Ridges Basin Delivery System	152,261,000	1,255,000	---	1,383,000	149,623,000
Durango M&I Pipeline	5,124,000	---	---	---	5,124,000
Ridges Basin Irrigation System	126,003,000	1,120,000	---	---	124,883,000
Southern Ute Dam and Collection System	46,876,000	329,850	---	---	46,546,150
Southern Ute Irrigation System	29,151,000	327,000	---	---	28,824,000
Drains	8,091,000	94,000	---	---	7,997,000
Permanent Operating Facilities	8,006,000	47,000	---	---	7,959,000
O&M Housing	216,500	---	---	---	216,500
Service Facilities, Depreciation, and Salvage .	---	---	130,000	520,000	-650,000
Engineering and Design	(51,863,000)	(5,100,000)	(529,000)	(2,406,000)	(43,828,000)
Supervision and Administration	(63,389,000)	(6,000)	(7,000)	(552,000)	(62,824,000)
Relocation Costs	(13,552,000)	(---)	(---)	(---)	(13,552,000)
Total Construction Costs	$545,404,500	$4,764,784	790,000	4,715,000	$535,134,716
Other Project Costs	21,328,000	378,462	160,000	520,000	20,269,538
Total Project Costs	$566,732,500	$5,143,246	950,000	$5,235,000	$555,404,254
Non-Federal Participation	-250,024,500	-24,500	---	-4,235,000	-245,765,000
Consolidated Expenditures and Credits	-2,100,000	-1,150,515	-700,000	---	-249,485
Total Expenditures	$314,608,000	$3,968,231	250,000	$1,000,000	$309,389,769
Undelivered Orders	---	---	---	---	---
Total Obligations (Reclamation)	$314,608,000	$3,968,231	250,000	$1,000,000	$309,389,769
Method of Financing:					
Appropriation available and required	---	---	---	$1,000,000	308,726,955
Application of prior year funds	---	---	250,000	---	---
Non-Federal Participation	---	---	---	4,235,000	245,765,000


MONTROSE CO
OURAY CO
Colona
LAND & RIGHTS
US 550
Uncompahgre
Creek
Horsefly
Creek
Creek
McKenzie
Fisher
RIDGWAY DAM, RESERVOIR, POWERPLANT & TRANSMISSION LINE
Cow
Alkali
Creek
Creek
Creek
Ridgway
Pleasant
Valley
Creek
Dallas
US 550
River
COLORADO 62
West
Fork
East
Fork
N
Craig
Ft. Collins
DENVER
COLORADO
Grand Jct
Colorado Springs
Salida
Montrose
Pueblo
DALLAS CREEK PARTICIPATING PROJECT
La Junta
Cortez
Durango
Trinidad
KEY MAP
EXPLANATION
▨ EXISTING IRRIGATED LANDS
1 0 1 2 3
SCALE OF MILES
RELOCATIONS
U.S. HIGHWAY 550
POWER & TELEPHONE LINES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
DALLAS CREEK
PARTICIPATING PROJECT
COLORADO
JANUARY [illegible]

REGION Upper Colorado	**PROJECT DATA SHEET**		PF-65 (2-84) Bureau of Reclamation
PROJECT AND STATE DALLAS CREEK PARTICIPATING PROJECT, COLORADO	Completion Date 1/ 1989	% Complete 85	Date 1/31/86
AUTHORIZATION Public Law 90-537, September 30, 1968 and Public Law 98-63, July 29, 1983	**BENEFIT COST RATIOS**		
LAND CERTIFICATION December 17, 1976 — **DEFINITE PLAN REPORT** Approved December 28, 1976 Supplement approved January 8, 1982	Based on Direct Benefits 2/ 1.3	Based on Total Benefits 1.3	Date 10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	14/	$116,527,000	Allotments to September 30, 1985	$97,215,155
Recreation-Fish and Wildlife	3/ 14/	31,212,000	Allotments for FY 1986 a/	5,604,000
Net Property and Other Transfers				
Federal Participation		-947,000		
Non-Federal Participation		---	Allotments to Date	102,819,155
Adjustment 4/		13,078,000	Allotments Required for FY 1987	4,286,000
Total to be Allocated		$159,870,000	Balance to Complete after FY 1987	$9,421,845

ALLOCATIONS 5/		REPAYMENT		AMOUNTS PER ACRE			
Irrigation	35,183,000	Amount Repaid by Irrigators 8/	3,200,000	Irrig. Invest. per Acre	1,687	Payment Capacity per Acre	$5.00
Power 6/	9,420,000	Amount Repaid by Power 9/	9,392,000	Repayment of Investment per Acre:		Annual Charges:	
M & I Water 6/	74,056,000	Amount Repaid by M & I Water 10/	37,794,000	By Irrigators	153	O & M	1.90
Recreation	27,006,000	Amount by Ad Valorem Tax	3,066,000	By Power Revenues		Construction	3.10
F & WL	7,492,000	CRDF 11/	332,000	By M & I Water Users			
Flood Control	3,921,000	Amount Repaid, UCRBF Rev. 12/	28,819,000	By UCRBF Rev.	1,382		
Hwy. Improvement	1,990,000			By Ad Val. Tax	147		
Other 7/	802,000	Nonreimbursable 13/	77,267,000	By CRDF	5		
Total	$159,870,000	Total	$159,870,000			Total	$ 5.00

STATUS OF REPAYMENT CONTRACT: Repayment contract with Tri-County Water Conservancy District executed January 14, 1977, validated March 1, 1977.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality, September 28, 1976.

DESCRIPTION: The project is located in Ouray and Montrose Counties of west-central Colorado. The multipurpose project will provide 4,200 kilowatts of installed capacity for generation of power and will develop water of the Uncompahgre River and its tributaries in the Upper Colorado River Basin to provide 28,100 acre-feet annually of municipal and industrial water to the rural towns of Colona, Olathe, Montrose, Delta, and surrounding areas and supplemental water to 20,850 acres of presently inadequately irrigated land. Benefits for recreation, fish and wildlife, and flood control will also result. Crops presently grown are fruit crops, small grains, alfalfa, corn silage, and pasture. It is anticipated that with project water all of the crop production will be intensified.

PROJECT DATA SHEET - 2

Dallas Creek Participating Project - Colorado

OTHER INFORMATION: Funds to initiate advance planning were appropriated in fiscal year 1970, for land acquisition in fiscal year 1973, and for construction in fiscal year 1975. Under authority of Public Law 84-485, power development has been added to the plan through the addition of Ridgway Dam Powerplant, 4,200 kilowatts, and its transmission line.

Footnotes:

1/ No change from that presented in the fiscal year 1986 Budget Justifications. Project will be essentially complete except for the powerplant which will not be completed until a non-federal participant is found.

2/ Direct and total benefit cost ratio's changed from 1.4 as presented in the FY 1986 Budget Justifications to 1.3 as costs increased slightly more than benefits. The ratios were computed by using the authorized interest rate of 3.25 percent.

3/ Includes $13,373,000 for a 20,900-acre-foot recreation pool in Ridgway Reservoir, $13,633,000 for recreation facilities costs, fish and wildlife costs of $2,443,000 and $1,763,000 of Big Game Range transferred to State of Colorado.

4/ Includes interest during construction of $630,000 for power and $12,448,000 for municipal and industrial water.

5/ Explanation of changes in allocations from fiscal year 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$28,378,000	$35,183,000
Power.	13,488,000	9,420,000
Municipal and Industrial Water	71,000,000	74,056,000
Recreation	23,474,000	27,006,000
Fish and Wildlife	5,417,000	7,492,000
Flood Control	3,037,000	3,921,000
Highway Improvement	1,990,000	1,990,000
Other (Cultural Resource Activities)	794,000	802,000
Total	$147,578,000	$159,870,000

PROJECT DATA SHEET - 3
Dallas Creek Participating Project - Colorado

Footnotes: (continued)

Explanation	Amount of Change
Reanalysis of quantities and unit prices.	+12,764,582
Interest During Construction.	+184,000
Indexing	+496,000
New items of work to be accomplished (Gaging Stations +$39,000, and Fencing Reservoir +$70,000)	+109,000
Reanalysis of non-contract requirements	-1,261,582
Total	$+12,292,000

The allocations to Irrigation, M&I Water, Flood Control and Cultural Resource Activities all increased due to increases in project costs. The allocation to power decreased due to the re-evaluation of costs for power to specific facilities. The allocation to Recreation increased due to repricing and indexing. The allocation to Fish and Wildlife increased due to repricing, indexing and addition of Big Game Range which was inadvertently omitted in FY 1986. The allocation to Highway Improvements did not change.

6/ Includes interest during construction as identified in footnote 4.

7/ For nonreimbursable cultural resources activities (Public Law 93-291).

8/ The scheduled amount to be repaid is covered by existing contracts with the project beneficiaries.

9/ Repayment of power investment to be accomplished through existing contracts between the Western Area Power Administration and the power users generated by CRSP Power Rate (Schedule SP-F1) effective on or after January 23, 1981.

10/ $38,000,000 based on an existing contract, less $206,000 credited from the CRDF is to be repaid by Tri-County Conservancy District. The balance of the municipal and industrial water allocation has been declared nonreimbursable by Public Law 98-63.

Footnotes: (continued)

11/ Municipal and industrial water cost, $206,000; irrigation cost, $98,000; and power cost, $28,000.

12/ From Upper Colorado River Basin Fund revenues apportioned to Colorado, as generated by CRSP Power Rate (Schedule SP-F1) effective on or after January 23, 1981.

13/ Includes $27,006,000 recreation costs; $7,492,000 fish and wildlife; $3,921,000 flood control; $1,990,000 relocation of highways to current standards under Public Law 93-251; $802,000 for cultural resources activities (Public Law 93-291); and $36,056,000 of municipal and industrial water costs declared nonreimbursable by Public Law 98-63.

14/ Appropriations authorized are $1,347,815,000 (October 1986) for the Colorado River Storage Project under Public Law 90-537. The comparable Federal obligation is $1,287,671,000. This authorization is adequate to cover the project as currently proposed. The authorized appropriation ceiling decreased from that shown in the fiscal year 1986 Budget Justification due to last year's overestimation of projected prices.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $240,972, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

CONSTRUCTION PROGRAM

Ridgway Dam and Reservoir

Dam:
Type - Earthfill
Structural Height - 227 feet
Crest Length - 2,430 feet
Crest Width - 30 feet

Spillway:
Type - Concrete, uncontrolled
Length - 1,120 feet
Design Discharge - 8,660 cubic feet per second

Reservoir Capacity:
Total Storage - 80,000 acre-feet
Water Surface Area - 1,030 acres

Ridgway Dam Powerplant and Transmission Line

Powerplant - One Unit - 4,200 kilowatts - Generating Head - 185 feet
Transmission Line - 46 kilovolts - 3,000 feet

Land and Rights

Quantity - 2,621 acres
Total Estimated Cost - $4,520,002
Cost Per Acre - $1,725
Acquisition - 100 percent complete as of September 30, 1985

Relocations

Total Estimated Cost - $5,625,734
Percent Complete - 100 percent as of September 30, 1985

Items:	Length (miles)	Total cost	Cost to September 30, 1985
U.S. Highway No. 550	5.3	$5,034,000	$5,034,000
Powerline relocation	5	518,331	518,331
Telephone line relocation	5	73,403	73,403
TOTAL		$5,625,734	$5,625,734

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

DALLAS CREEK PARTICIPATING PROJECT, COLORADO - 6

FISCAL YEAR 1987

Work Proposed	Program
Ridgway Dam and Reservoir. - Construction will be completed on Ridgway Dam, Stage II. Minor contracts associated with completion of the major construction will be awarded.	$4,105,000
Ridgway Powerplant and Transmission Line. - Preconstruction activities will be continued.	181,000
TOTAL	$4,286,000

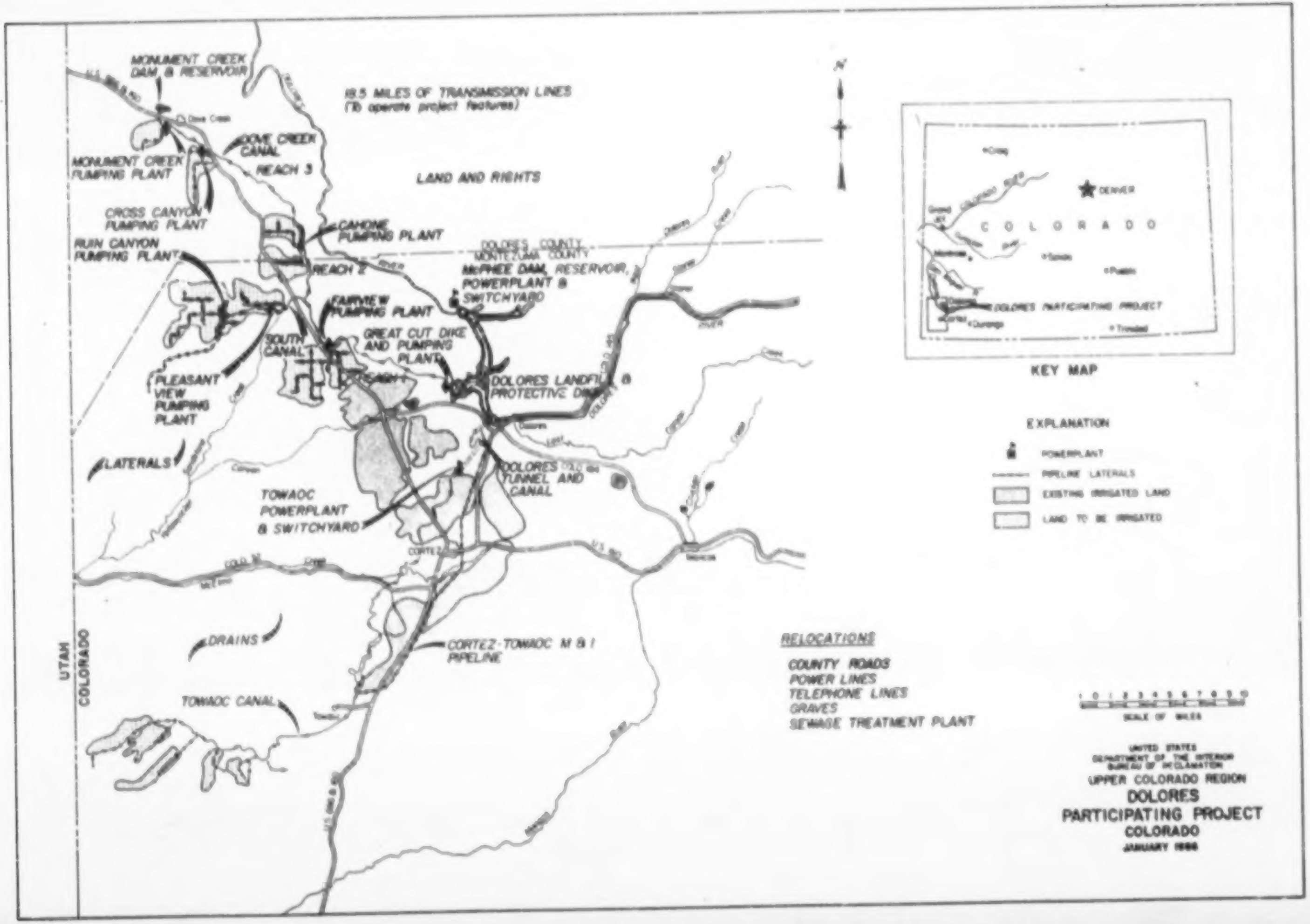
DALLAS CREEK PARTICIPATING PROJECT, COLORADO

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Ridgway Dam and Reservoir	$105,629,792	$96,092,434	$ 5,079,000	$4,105,000	$ 353,358
Ridgway Powerplant	10,838,000	861	1,161,000	181,000	9,495,139
Permanent Operating Facilities	284,208	284,208	---	---	---
Service Facilities, Depreciation, and Salvage . . .	---	595,551	---	---	-595,551
Engineering and Design	(14,937,000)	(13,315,000)	(744,000)	(475,000)	(403,000)
Supervision and Administration	(15,816,701)	(12,115,976)	(1,583,568)	(767,660)	(1,349,497)
Relocation Costs	(5,625,734)	(5,625,734)	(---)	(---)	(---)
Total Construction Costs	$116,752,000	$96,973,054	$6,240,000	$4,286,000	$9,252,946
Other Project Costs	575,000	575,000	---	---	---
Total Project Costs	$117,327,000	$97,548,054	$6,240,000	$4,286,000	$9,252,946
Consolidated Expenditures and Credits	-800,000	-969,011	112	---	168,899
Total Expenditures	$116,527,000	$96,579,043	$6,240,112	$4,286,000	$9,421,845
Undelivered Order	---	97,112	-97,112	---	---
Total Obligations (Reclamation)	$116,527,000	$96,676,155	$6,143,000	$4,286,000	$9,421,845
Method of Financing:					
Appropriation available and required	---	---	$5,604,000	$4,286,000	$9,421,845
Application of prior year funds	---	---	539,000	---	---

GPO 821-300


MONUMENT CREEK DAM & RESERVOIR
18.5 MILES OF TRANSMISSION LINES (To operate project features)
DOVE CREEK CANAL
MONUMENT CREEK PUMPING PLANT
REACH 3
LAND AND RIGHTS
CROSS CANYON PUMPING PLANT
CAHONE PUMPING PLANT
RUIN CANYON PUMPING PLANT
REACH 2
DOLORES COUNTY
MONTEZUMA COUNTY
McPHEE DAM, RESERVOIR, POWERPLANT & SWITCHYARD
FAIRVIEW PUMPING PLANT
SOUTH CANAL
GREAT CUT DIKE AND PUMPING PLANT
PLEASANT VIEW PUMPING PLANT
DOLORES LANDFILL & PROTECTIVE DIKE
LATERALS
DOLORES TUNNEL AND CANAL
TOWAOC POWERPLANT & SWITCHYARD
CORTEZ
DRAINS
CORTEZ-TOWAOC M & I PIPELINE
TOWAOC CANAL
UTAH
COLORADO
RELOCATIONS
COUNTY ROADS
POWER LINES
TELEPHONE LINES
GRAVES
SEWAGE TREATMENT PLANT
N
Craig
DENVER
Grand Jct.
COLORADO
Pueblo
DOLORES PARTICIPATING PROJECT
Durango
Trinidad
KEY MAP
EXPLANATION
POWERPLANT
PIPELINE LATERALS
EXISTING IRRIGATED LAND
LAND TO BE IRRIGATED
1 0 1 2 3 4 5 6 7 8 9 10
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
DOLORES
PARTICIPATING PROJECT
COLORADO
JANUARY 1986

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE DOLORES PARTICIPATING PROJECT, COLORADO	Completion Date 1995 1/	% Complete 57	Date 1/31/86

AUTHORIZATION
Public Law 90-537, September 30, 1968; Public Law 98-569, October 30, 1984

LAND CERTIFICATION
June 28, 1977

DEFINITE PLAN REPORT Approved July 5, 1977
Supplement approved January 8, 1982

BENEFIT COST RATIOS

Based on Direct Benefits	Based on Total Benefits	Date
2/ 1.1	2/ 1.2	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	17/	$404,524,000
Net Property and Other Transfers Recreation - Fish and Wildlife	3/	27,470,000
Federal Participation		957,000
Non Federal Participation		---
Adjustment 4/		3,460,000
Total to be Allocated		$436,411,000

Allotments to September 30,	1985		$228,898,723
Allotments for FY	1986	a/	22,576,000
Allotments to Date			251,474,723
Allotments Required for FY	1987		20,375,000
Balance to Complete after FY	1987		$132,674,277

ALLOCATIONS 5/	
Irrigation	$272,812,000
Power 6/	21,182,000
M & I Water 6/	15,610,000
Recreation	15,532,000
F & WL	66,594,000
Flood Control	2,661,000
Hwy Improvement	1,923,000
Saline Control 6/	23,477,000
Other 7/	16,620,000
Total	$436,411,000

REPAYMENT		
Amount Repaid by Irrigators	8/	$ 7,425,000
Amount Repaid by Power	9/	21,150,000
Amount Repaid by M & I Water	10/	15,522,000
Amount Repaid by LCRBDF & UCRBF Revenues	11/ 12/	262,366,000
CRDF & Other Funds	13/	607,000
Ad Val. Tax Revenues	14/	4,300,000
Amt. def. under Leavitt Act	15/	5,445,000
Nonreimbursable	12/ 16/	120,789,000
Total		$436,411,000

AMOUNTS PER ACRE

Irrig. Invest. per Acre	$4,424
Repayment of Investment per Acre:	
By Irrigators	120
By Power Revenues	
By M & I Water Users By UCRB Rev.	4,138
By Ad Val. tax	70
CRDF & Contr. Funds	8
Indian Irrigation (Deferred)	88

Payment Capacity per Acre	$18.90
Annual Charges:	
O & M	13.80
Construction	4.20
Total	$18.00

STATUS OF REPAYMENT CONTRACT: Repayment contract with Dolores Water Conservancy District executed September 23, 1977, validated September 23, 1977. Repayment contract with Ute Mountain Ute Indian Tribe scheduled for execution May 1986.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Council on Environmental Quality May 9, 1977.

DESCRIPTION: The project is located in Montezuma and Dolores Counties in southwestern Colorado. This is a multipurpose project which will provide 13,750 kilowatts of installed capacity for generation of power, 8,700 acre-feet annually of municipal and industrial water supplies with new municipal and industrial supplies allocated for the Ute Mountain Ute Indians. The project will provide a full water supply for the irrigation of 27,860 acres of land in the Dove Creek area and 7,500 acres located on the Ute Mountain Ute Indian Reservation near Towaoc. A supplemental supply will be provided for 26,300 acres of presently irrigated land. By lining and combining canal systems of the Montezuma Valley Irrigation Co. (MVIC) salt loading would be reduced by 24,500 tons. Since irrigation of new lands in the Dolores Project would increase salt loading 10,080 tons the net effect of the Dolores Project on salt loading would be to remove 14,420 tons of salt from the Colorado River. Benefits will also result from recreation, F&W enhancement, and flood control. Crops grown in the full service area presently under dry farming are pinto beans and wheat. It is anticipated that with project water there will be an increased production of alfalfa, small grains, corn and pasture similar to the adjacent irrigated lands.

PROJECT DATA SHEET - 2
Dolores Participating Project, Colorado

OTHER INFORMATION: Funds to initiate advance planning were appropriated in FY 1970 and construction in FY 1977. Monument Creek Dam and Reservoir and part of Cortez-Towaoc M&I Pipeline have been removed from the funded program of the project as they will be constructed by the Dolores Water Conservancy District.

P.L. 98-569 authorized salinity control as a purpose of the Dolores Project and combines features of the McElmo Creek Unit, Colorado River Water Quality Improvement Program with the Dolores Project.

Footnotes:

1/ No change from amount presented in the fiscal year 1986 Budget Justifications.

2/ No change from the ratio presented in the fiscal year 1986 Budget Justifications. The ratio was computed by using the authorized interest rate of 3.25 percent.

3/ Represents specific recreation costs of $15,532,000 and fish and wildlife mitigation costs of $11,876,000 and wetlands acquisition $62,000.

4/ Represents reimbursable interest during construction of $1,197,000 for power and $2,023,000 for municipal and industrial water facilities and $240,000 for Salinity Control.

5/ Explanation of changes in allocations from fiscal year 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$264,531,000	$272,812,000
Power	24,660,000	21,182,000
Municipal and Industrial Water	21,246,000	15,610,000
Recreation	16,355,000	15,532,000
Fish and Wildlife	54,611,000	66,594,000
Flood Control	2,656,000	2,661,000
Highway Improvement	2,187,000	1,923,000
Salinity Control	25,040,000	23,477,000
Other	15,922,000	16,620,000
Total	$427,208,000	$436,411,000

PROJECT DATA SHEET - 3
Dolores Participating Project, Colorado

Explanation	Amount of Change
Revised estimates on McPhee Dam, Sewage Treatment Plant, Glade Road, Waterlines, Fencing, Spillway and Airslot, Great Cut Pumping Plant, Reservoir Clearing-II, Dolores Tunnel and Canal, Cortez-Towaoc M&I Pipeline, Dolores Landfill and Protective Dike, Transmission Lines, Dove Creek Canal, Reach II and III, Capitalized Equipment, O&M Housing, Future Recreation and Wildlife Facilities and Cultural Resources.	$+5,550,000
Interest During Construction.	-816,000
Additional features of telemetry cables and equipment	+2,455,000
Unfavorable bids on the Cahone Pumping Plant and Laterals	+243,000
Favorable bids on Dove Creek Canal-Reach II and Fairview Pumping Plant	-1,227,000
Cost Indexing.	+4,462,000
Total	$+10,667,000

The allocation to irrigation increased due to cost indexing, addition of telemetry cables and equipment and updating estimates of the remaining facilities. The allocation to power decreased due to a decrease in power benefits. The allocation to municipal and industrial water decreased because the Cortez Pipeline and Monument Creek Reservoir, although previously converted to non-federal features, were inadvertantly included in the previous allocation causing the M&I allocation to be overstated. The current submission is based on a complete reallocation with the features removed. The allocation to recreation decreased due to revised estimates on non-contract costs. The allocation to fish and wildlife increased due to increase in McPhee Dam costs, Wetlands acquisition indexing and new allocation analysis. The allocation to flood control increased due to increase in total project costs. The allocation to highway improvement decreased due to reanalysis of previous allocation. The allocation to salinity control decreased due to reanalysis of previous allocation based on costs of Towoac/Highline Canal. The allocation to other increased due to increased estimate of cultural resources.

Footnotes: - (continued)

6/ Includes $3,460,000 reimbursable interest during construction of which $1,197,000 is for power, $2,023,000 for municipal and industrial water facilities, and $240,000 for salinity control.

7/ For nonreimbursable cultural resource activities (Public Law 93-291 and Public Law 96-301).

8/ The amount to be repaid of $7,425,000 is covered by contract with the Dolores Water Conservancy District.

9/ Repayment of power investment to be accomplished through existing contracts between the Western Area Power Administration and the power users generated by CRSP Power Rate (Schedule SP-F1) effective on or after January 23, 1981.

10/ The amount to be repaid for 7,700 acre-feet of the project municipal and industrial supply of 8,700 acre-feet, is covered by an existing contract with Dolores Water Conservancy District. The additional 1,000 acre-feet are assigned to the Ute Mountain Ute Indian Tribe and will be contracted for prior to delivery.

11/ $256,441,000 from Upper Colorado River Basin Fund revenues apportioned to Colorado, as generated by CRSP Power Rate (Schedule SP-F1) effective on or after January 23, 1981, of which $255,155,000 will be used for repayment of irrigation and $1,286,000 for repayment of salinity control purposes. $5,925,000 from Lower Colorado River Development Fund Revenues for payment of salinity control purposes.

12/ Public Law 93-320, section 205, as amended by Public Law 98-569, states that 70 percent of Salinity costs will be nonreimbursable. The other 30 percent is divided between the Lower Colorado River Basin Development Fund and the Upper Colorado River Basin Fund based on benefits to be derived by each basin from the use of water of improved quality, causes of salinity, and availability of revenues, provided that costs allocated to the upper basin shall not exceed 15 percent of the costs allocated to the upper and lower basin funds.

13/ Includes $475,000 from the Colorado River Development Fund, $32,000 from the BIA (Bureau of Indian Affairs), and $100,000 contributed from Shell Oil Company towards construction of Bradfield Bridge and applied to irrigation costs. The Colorado River Development Fund will be prorated $56,000 for Municipal and Industrial water, $32,000 for power, and $387,000 for irrigation costs. The BIA funds will be applied toward repayment of the Municipal and Industrial obligation of the Indians.

14/ Repayment for irrigation.

PROJECT DATA SHEET - 5
Dolores Participating Project, Colorado

Footnotes: - (continued)

15/ Amount of costs allocated to Indian irrigation. The Leavitt Act permits repayment to be deferred as long as the land is in Indian ownership.

16/ Includes $15,532,000 recreation costs, $66,594,000 fish and wildlife costs, $2,661,000 flood control, $16,620,000 for cultural resources activities (Public Law 96-301), and $1,923,000 highway improvement (Public Law 93-251) and $16,266,000 for salinity control.

17/ Appropriations authorized are $1,347,815,000 (October 1986) for the Colorado River Storage Project under Public Law 90-537. The comparable Federal obligation is $1,287,671,000. This authorization is adequate to cover the project as currently proposed.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $970,768, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

DOLORES PARTICIPATING PROJECT, COLORADO
PHYSICAL DATA ON STRUCTURES - 6

CONSTRUCTION PROGRAM:

McPhee Dam and Reservoir

Dam:
- Type - Earthfill
- Structural Height - 270 feet
- Crest Length - 1,300 feet
- Crest Width - 30 feet

Spillway:
- Type - Gated concrete chute
- Design Discharge - 33,300 cubic feet per second
- Outlet Works - 5,000 cubic feet per second

Reservoir Capacity:
- Total Storage - 381,000 acre-feet
- Water Surface Area - 4,470 acres

Powerplant:
- McPhee - one generating unit - 1,250 kilowatts   Generating Head - 218 feet   Flow - 50 cubic feet per second

Switchyard: 1,375 kilovolts ampere

Transmission Lines: 12.5 kilovolts   Length: 4.5 miles

Great Cut Dike

Dam:
- Type - Earthfill
- Structural Height - 64 feet
- Crest Length - 1,900 feet
- Crest Width - 30 feet

Spillway:
- Type - None
- Outlet Works - 820 cubic feet per second

DOLORES PARTICIPATING PROJECT, COLORADO
PHYSICAL DATA ON STRUCTURES - 7

Dove Creek Distribution System

Great Cut Pumping Plant
Capacity - 380 cubic feet per second at 108-foot total head

Sprinkler Pumping Plants

Four pumping plants to provide water to pipe laterals for sprinkler irrigation. Capacity 20 to 98 cubic feet per second with total heads from 83 to 171 feet.

Dove Creek Canal - Length - 39.5 miles   Canal Capacity - 380 to 30 cubic feet per second

South Canal Distribution System

South Canal - Length - 6.9 miles   Canal Capacity - 160 to 30 cubic feet per second

Cortez-Towaoc Distribution System

Dolores Tunnel - Length - 1.3 miles   Diameter - 9 feet   Capacity - 520 cubic feet per second

Dolores Canal - Length - 1.3 miles   Canal Capacity - 520 to 70 cubic feet per second

Towaoc Highline Canal- Length - 51.4 miles   Canal Capacity - 435 to 86 cubic feet per second

Cortez-Towaoc M&I Pipeline   - Length - 12.1 miles   Diameter - 21 to 10 inches
Hydroflow - 17 to 3 cubic feet per second
M&I Water - 1,000 acre-feet

DOLORES PARTICIPATING PROJECT, COLORADO
PHYSICAL DATA ON STRUCTURES - 8

MVIC Canals Lining - 9.2 miles (Upper Hermana and Lone Pine)

Powerplant:
Towaoc Canal - Three generating units - 12,500 kilowatts 1/ Generating Head - 445 feet Flow - 325 cubic feet per second
Two units at 4,500 kilowatts
One unit at 3,500 kilowatts

Switchyard: 14,580 kilovolts ampere

Transmission Lines: 115 kilovolts Length - 3.25 miles

Laterals
Twelve lateral pipe systems with a total of 91.3 miles to deliver water to farms in the Dove Creek and Towaoc areas.

Drains
73 miles of buried pipe drains.

Land and Rights 2/
Quantity - 7,942
Total Estimated Cost - $10,583,275
Cost Per Acre - $1,332
Acquisition - 89 percent complete as of September 30, 1985

1/ Changed from 10,500 kilowatts because of increase in capacity of generating unit due to design changes.

2/ Total cost increased due to actual costs of Dove Creek land.

DOLORES PARTICIPATING PROJECT, COLORADO
PHYSICAL DATA ON STRUCTURES - 9

Relocations 3/
Total estimated cost - $12,679,000
Percent complete - 54 percent complete as of September 30, 1985

Items	Length (miles)	Total cost	Cost to September 30, 1985
County roads	55.7	$9,505,000	$3,691,516
Various electrical, telephone, utilities, and graves		1,141,000	1,066,000
Sewage treatment plant for Dolores		2,033,000	2,033,000
TOTAL		$12,679,000	$6,790,516

3/ Estimated cost increased $54,000 from $12,625,000 as presented in FY 1986 Budget Justifications. County roads decreased $138,000 based on actual awards and new estimates. Utilities decreased $8,000 based on contract awards. Sewage treatment plant increased $200,000 due to actual costs.

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

DOLORES PARTICIPATING PROJECT, COLORADO - 10

FISCAL YEAR 1987

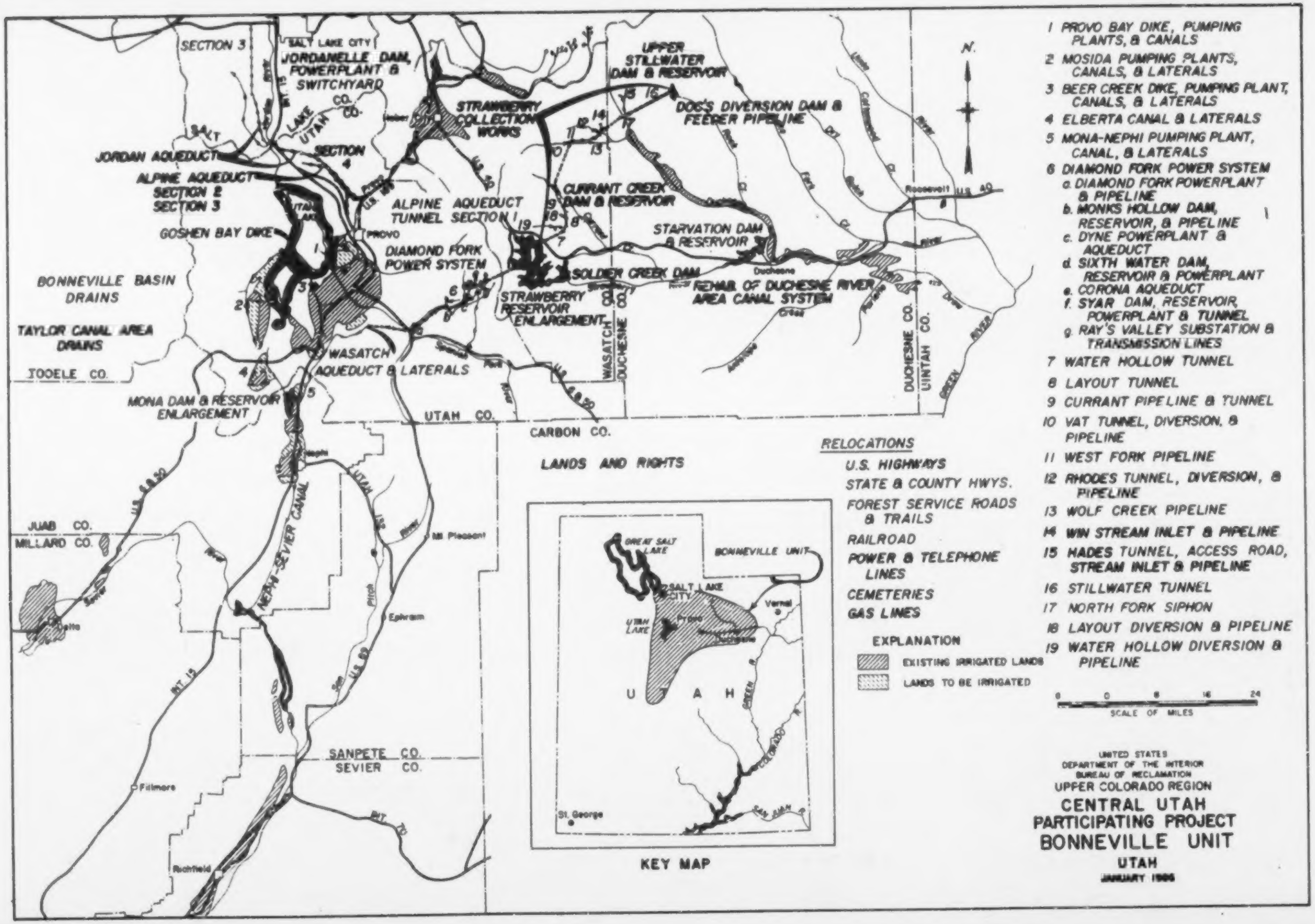
Work Proposed	Program
McPhee Dam and Powerplant. - Contracts will be awarded for Williams Draw Road and McPhee Dam Powerplant. Construction of Dolores-Norwood-May Canyon Road, will continue. The McPhee Dam guardrail and Reservoir fencing will be completed.	$ 2,287,000
Dove Creek Distribution System. - Work will be completed on the Fairview and Cahone Pumping Plants and Laterals, and Dove Creek Canal, Reach II. Dove Creek Canal land purchases will be completed. Preconstruction activities of other features will continue.	4,500,000
South Canal Distribution System. - Construction will begin on the Pleasant View-Ruin Canyon-Hovenweep Pumping Plants and Laterals. Construction of the South Canal will continue.	8,098,000
Cortez-Towaoc Distribution System. - Land for the Towaoc Canal Powerplant and for the Towaoc Pipeline will be purchased. Preconstruction activities will continue on features of the system.	2,280,000
Permanent Operating Facilities. - Purchase of the automatic supervisory control and monitoring system will begin. Contracts to lay telemetry cable, and to construct a supervisory control building will be awarded.	1,301,000
Service Facilities, Depreciation, and Salvage. - Purchase of office and field equipment will continue.	25,000
Other Project Costs. - Provides for completion of the cultural resources activities and to purchase electric capacity in transmission lines to service project pumping and powerplants.	1,884,000
TOTAL	$20,375,000

DOLORES PARTICIPATING PROJECT COLORADO

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1966 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
McPhee Dam and Powerplant	$153,989,000	$143,896,397	$ 5,695,000	$ 2,287,000	$ 2,110,603
Dove Creek Distribution System	73,604,000	38,542,401	15,577,000	4,500,000	14,984,599
South Canal Distribution System	24,920,000	2,062,265	3,229,000	8,098,000	11,530,735
Cortez-Towaoc Distribution System	117,361,000	19,108,396	2,699,000	2,280,000	93,273,604
Drains	8,724,000	221,658	---	---	8,502,342
Permanent Operating Facilities	7,510,000	157,805	285,000	1,301,000	5,766,195
O&M Housing	60,000	774	---	---	59,226
Service Facilities, Depreciation, and Salvage . .	---	1,940,838	44,341	25,000	-2,010,179
Engineering and Design	(38,943,000)	(25,233,000)	(2,000,000)	(11,800,000)	(9,910,000)
Supervision and Administration	(47,598,410)	(24,190,612)	(5,256,802)	(3,991,653)	(14,159,343)
Relocation costs	(12,679,000)	(6,790,516)	(3,634,000)	(1,100,000)	(1,154,484)
Total Construction Cost	$386,168,000	$205,930,534	$27,529,341	$18,491,000	$134,217,125
Other Project Costs	19,313,000	15,226,686	2,010,000	1,884,000	192,320
Total Project Cost	$405,481,000	$221,157,214	$29,539,341	$20,375,000	$134,409,445
Consolidated Expenditures and Credits	-957,000	2,642,168	---	---	-3,599,168
Total Expenditures	$404,524,000	$223,799,382	$29,539,341	$20,375,000	$130,810,277
Undelivered Orders	---	4,955,341	-4,955,341	---	---
Total Obligations (Reclamation)	$404,524,000	$228,754,723	$24,584,000	$20,375,000	$130,810,277
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$22,720,000	$20,375,000	$130,810,277
Underfinancing	---	---	1,864,000	---	---


1 PROVO BAY DIKE, PUMPING PLANTS, & CANALS
2 MOSIDA PUMPING PLANTS, CANALS, & LATERALS
3 BEER CREEK DIKE, PUMPING PLANT, CANALS, & LATERALS
4 ELBERTA CANAL & LATERALS
5 MONA-NEPHI PUMPING PLANT, CANAL, & LATERALS
6 DIAMOND FORK POWER SYSTEM
a. DIAMOND FORK POWERPLANT & PIPELINE
b. MONKS HOLLOW DAM, RESERVOIR, & PIPELINE
c. DYNE POWERPLANT & AQUEDUCT
d. SIXTH WATER DAM, RESERVOIR & POWERPLANT
e. CORONA AQUEDUCT
f. SYAR DAM, RESERVOIR, POWERPLANT & TUNNEL
g. RAY'S VALLEY SUBSTATION & TRANSMISSION LINES
7 WATER HOLLOW TUNNEL
8 LAYOUT TUNNEL
9 CURRANT PIPELINE & TUNNEL
10 VAT TUNNEL, DIVERSION, & PIPELINE
11 WEST FORK PIPELINE
12 RHODES TUNNEL, DIVERSION, & PIPELINE
13 WOLF CREEK PIPELINE
14 WIN STREAM INLET & PIPELINE
15 HADES TUNNEL, ACCESS ROAD, STREAM INLET & PIPELINE
16 STILLWATER TUNNEL
17 NORTH FORK SIPHON
18 LAYOUT DIVERSION & PIPELINE
19 WATER HOLLOW DIVERSION & PIPELINE
N.
SALT LAKE CITY
SECTION 3
JORDANELLE DAM, POWERPLANT & SWITCHYARD
STRAWBERRY COLLECTION WORKS
UPPER STILLWATER DAM & RESERVOIR
DOG'S DIVERSION DAM & FEEDER PIPELINE
JORDAN AQUEDUCT
SECTION 4
ALPINE AQUEDUCT SECTION 2 SECTION 3
ALPINE AQUEDUCT TUNNEL SECTION 1
CURRANT CREEK DAM & RESERVOIR
STARVATION DAM & RESERVOIR
GOSHEN BAY DIKE
PROVO
DIAMOND FORK POWER SYSTEM
SOLDIER CREEK DAM
REHAB. OF DUCHESNE RIVER AREA CANAL SYSTEM
STRAWBERRY RESERVOIR ENLARGEMENT
BONNEVILLE BASIN DRAINS
TAYLOR CANAL AREA DRAINS
WASATCH AQUEDUCT & LATERALS
TOOELE CO.
UTAH CO.
MONA DAM & RESERVOIR ENLARGEMENT
WASATCH
DUCHESNE
DUCHESNE CO.
UINTAH CO.
Roosevelt
Duchesne
US 40
CARBON CO.
LANDS AND RIGHTS
JUAB CO.
MILLARD CO.
NEPHI-SEVIER CANAL
Nephi
Mt Pleasant
Ephraim
Delta
Fillmore
Richfield
SANPETE CO.
SEVIER CO.
RELOCATIONS
U.S. HIGHWAYS
STATE & COUNTY HWYS.
FOREST SERVICE ROADS & TRAILS
RAILROAD
POWER & TELEPHONE LINES
CEMETERIES
GAS LINES
EXPLANATION
▨ EXISTING IRRIGATED LANDS
▨ LANDS TO BE IRRIGATED
0 0 8 16 24
SCALE OF MILES
GREAT SALT LAKE
BONNEVILLE UNIT
SALT LAKE CITY
UTAH LAKE
Provo
Vernal
Duchesne
U T A H
GREEN R.
COLORADO R.
SAN JUAN R.
St. George
KEY MAP
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
CENTRAL UTAH
PARTICIPATING PROJECT
BONNEVILLE UNIT
UTAH
JANUARY 1966

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE	Completion Date	% Complete	Date
CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH	1/ 1996	39	1/31/86

AUTHORIZATION
Public Law 84-485, April 11, 1956; Public Law 92-370, August 10, 1972

LAND CERTIFICATION December 28, 1965
Sevier Basin Sched. for April 1987.

DEFINITE PLAN REPORT Approved November 5, 1965.
Supplement scheduled to be approved June 1987. 2/

BENEFIT COST RATIOS

Based on Direct Benefits	Based on Total Benefits	Date
3/ 1.7	3/ 1.8	10/1/86

SUMMARIZED FINANCIAL DATA

Construction Revenues		$ 928,928
Total Federal Obligations (Reclamation)	17/	1,589,240,072
Recreational-Fish and Wildlife	4/ 17/	133,755,000
Net Property and Other Transfers:	5/	-644,000
Federal Participation		
Non-Federal Participation	6/	270,639,000
Adjustment	7/	121,020,000
Total to be Allocated		$2,114,939,000

Allotments to September 30, 1985		$ 561,711,006
Allotments for FY 1986	a/	44,804,000
Allotments to Date		606,515,006
Allotments Required for FY 1987		83,793,000
Balance to Complete after FY 1987		$ 898,932,066

ALLOCATIONS 8/		
Irrigation		$ 999,729,000
Power	9/	324,881,000
M & I Water	9/	513,687,000
Recreation		62,641,000
F & WL		170,900,000
Flood Control		5,508,000
Hwy Improvement		37,593,000
Other		
Total		$2,114,939,000

REPAYMENT		
Amount Repaid by Irrigators	10/	$ 16,400,000
Amount Repaid by Power	11/	324,881,000
Amount Repaid by M & I Water	10/	332,210,000
Amt Paid by UCRBF Rev.	12/	982,548,000
By CRDF Contributions and Other	10/ 13/	11,126,000
Ad Valorem Tax Rev.	10/ 14/	171,132,000
Nonreimbursable	15/	276,642,000
Total		$2,114,939,000

AMOUNTS PER ACRE

Irrig. Invest. per Acre	$4,104
Repayment of Investment per Acre:	
By Irrigators	67
By Power Revenues	4,034
By M & I Water Users	--
By CRDF & Contrib.	3

Payment Capacity per Acre	$7.32
Annual Charges:	
O & M	6.02
Construction	1.35
Total	$7.37

STATUS OF REPAYMENT CONTRACT: Repayment contract with Central Utah Water Conservancy District executed December 28, 1965, validated February 17, 1966. Amended April 15, 1966. Supplemental Repayment Contract with Central Utah Conservancy District for remainder of municipal and industrial water costs excluding 66 percent of Jordan Aqueduct costs and contracts with Salt Lake County Conservancy District and Metropolitan Water District of Salt Lake City for 66 percent of Jordan Aqueduct costs executed November 26, 1985. Scheduled for validation in January 1986.

STATUS OF NEPA COMPLIANCE: 16/ Diamond Fork Power System, final environmental statement filed with Environmental Protection Agency - October 4, 1984; Utah Lake and Irrigation Features, environmental statement scheduled to Environmental Protection Agency - draft July 1986, final May 1987; Duchesne River Area Canal System Rehabilitation, environmental statement was sent to Environmental Protection Agency in May 29, 1984; a Finding of no Significant Impact was signed on May 21, 1984.

DESCRIPTION: The Bonneville Unit, which is part of the Central Utah Project, is located in central Utah, the eastern part of the Bonneville Basin, and in the western part of Uinta Basin in Uintah, Duchesne, Wasatch, Summit, Utah, Salt Lake, Juab, Sevier, and Millard Counties, Utah. The unit is multipurpose in scope. It will provide a full water supply for irrigation of 27,340 acres of new land, a supplemental water supply to 216,250 acres of partially irrigated lands, 94,100 acre-feet of water annually for municipal and industrial use, and 176,600 kilowatts of installed capacity for

PROJECT DATA SHEET - 2

Central Utah Participating Project, Bonneville Unit, Utah

DESCRIPTION: (continued) generation of power to be used for irrigation pumping and for commercial sale. Benefits of fish and wildlife, recreation, and flood control will also be provided. Crops presently grown are alfalfa and small grains, including corn, deciduous fruit and pasture. It is anticipated with project development the same crops will be grown.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1957 and for construction in FY 1966. In the initial planning of the Central Utah Project, irrigation development of 15,242 acres of Indian land was to occur as part of the initial phase of the Central Utah Project in the Uintah Basin. In the Definite Plan Report planning of the Bonneville Unit, Central Utah Project, the Ute Indian Tribe deferred current use of their water for later irrigation development of 15,242 acres of land so that construction of the Bonneville Unit could proceed. The Ute Indian Tribe passed a resolution dated August 18, 1975, urging that development of Indian facilities proceed concurrently with development of non-Indian facilities. In a letter to Congressman McKay, the Secretary of the Interior expressed a desire to meet the request of the Ute Tribe. Development of 15,242 acres of land on Leland Bench for Indian use will meet the Ute Tribal request. Investigations are being carried out on lands of the Leland Bench to determine if irrigation of that area is feasible and will meet the expressed needs of the Ute Indian Tribe. Reconnaissance estimates of the total cost of the Leland Bench are $102,570,000. Investigations of Leland Bench were completed in FY 1985. The Diamond Fork Power System is currently proposed to be constructed utilizing nonfederal financing for commercial power and Federal financing of project power.

Footnotes:

1/ Supplemental water is available to 26,450 acres, and facilities have been completed to provide municipal and industrial water of 18,000 acre-feet annually. Construction of the Strawberry Collection System is scheduled for completion in 1989 and construction of this project is scheduled to be completed in 1996.

2/ The Governor of the State of Utah recently organized a review team to take a close look at the Central Utah Project. Several recommendations of that review team are being incorporated into the Bureau's preferred plan. Several major changes were recommended for the Irrigation and Drainage System and the Diamond Fork Power System. The analysis of these changes will cause a delay of 1 year for the completion of the supplemental Definite Plan Report.

3/ The ratios were reduced to 1.7 (Direct) and 1.8 (Total) from 1.8 and 1.9 as they were presented in the FY 1986 Budget Justifications, as the 27,000 AF of Industrial water was converted to irrigation usage. The ratios were computed by using the authorized interest rate of 3.125 percent.

PROJECT DATA SHEET - 3
Central Utah Participating Project, Bonneville Unit, Utah

4/ Includes specific fish and wildlife obligations of $67,871,000 and specific recreation obligations of $62,641,000 and $3,243,000 for Big Game Range transfers to the State of Utah, Department of Natural Resources.

5/ Includes net property and other transfers in the Section 5 Program of $2,500,000 and $-3,194,000 in the Fish and Wildlife Program and $50,000 in the Recreation Program.

6/ Includes $10,040,000 which represents an advance from the Central Utah Water Conservancy District and $260,599,000 of projected non-Federal financing for the development of commercial power portion of the Diamond Fork Power System.

7/ Represents reimbursable interest during construction of $40,583,000 for power which accrues prior to repayment by non-Federal entities for development of the Diamond Fork Power System, and $80,437,000 for municipal and industrial water facilities.

8/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 915,090,000	$ 999,729,000
Power	296,371,000	324,881,000
Municipal and Industrial Water	640,882,000	513,687,000
Recreation	61,531,000	62,641,000
Fish and Wildlife	167,295,000	170,900,000
Flood Control	5,619,000	5,508,000
Highway Improvement	35,012,000	37,593,000
Total	$2,121,800,000	$2,114,939,000

Explanation	Amount of Change
Increased estimate on future contracts: (Includes Relocation of Highways 40 and 189)	$+29,678,000
New contracts to complete existing facilities	+6,722,000
Revised contract value on 18 contracts which are nearing completion	+12,009,000
Cost Indexing - October 1985 to October 1986	+9,532,000

PROJECT DATA SHEET - 4
Central Utah Participating Project Bonneville Unit, Utah

Footnotes: (continued)

Interest During Construction	-18,643,000
Program deletions: (Includes Diamond Fork Power System Switchyards)	-27,314,000
Others: Reevaluation of minor contracts and non-contract costs, revised land costs, additional ADP and heavy equipment costs, and revised contract values	-12,975,000
Decreased estimate on future contracts	-5,870,000
Total	$ -6,861,000

The allocation to irrigation increased due to changing the use of 27,000 AF of Industrial water to additional irrigation for existing farm acreages. The allocation to power increased due to the single purpose alternative for power increasing more than the single purpose alternative for water. The allocation to municipal and industrial water decreased due to the single purpose alternative for water increasing less than the increase for the single purpose alternative for power and due to deleting 27,000 AF of Industrial water. The allocation to Recreation increased due to indexing, additional noncontract requirements, actual land purchases, revised contract values, new estimates on contracts. The allocation to Fish and Wildlife increased due to indexing, addition of three new contracts, new estimates on contracts. The allocation to flood control decreased due to change in single purpose alternatives. The allocation to highway improvements increased due to new estimate on highway relocations.

9/ Includes interest during construction as identified in footnote 7.

10/ Of the amount to be repaid, $488,868,000 is covered by an existing contract with the Central Utah Water Conservancy District for both irrigation and municipal and industrial water, and includes repayment by ad valorem tax revenues. The balance of $42,000,000 to be repaid for municipal and industrial water will be repaid by contract with the Metropolitan Water Conservancy District of Salt Lake City and Salt Lake County Conservancy District which are scheduled for execution February 1986.

11/ Power repayment will be covered by contracts with non-federal entities for upfront financing of commercial power on the Diamond Fork Power System.

12/ From Upper Colorado River Basin Fund revenues apportioned for use in the State of Utah, as generated by CRSP Power Rate (Schedule SP-F1) effective on or after January 23, 1981.

PROJECT DATA SHEET - 5
Central Utah Participating Project, Bonneville Unit, Utah

Footnotes: (continued)

13/ Colorado River Development Fund investigations costs, $881,000; non-federal contributions, $10,157,000; income received from grazing leases on withdrawn lands, $88,000. These costs are assigned $781,000 to irrigation, $10,345,000 to municipal and industrial water.

14/ For municipal and industrial water.

15/ Includes $5,508,000 for flood control, $170,900,000 for fish and wildlife, $62,641,000 for recreation, and $37,593,000 for relocation of highways to higher standards under Public Law 93-251.

16/ The final environmental statement for the collection system was filed with the Council on Environmental Quality August 2, 1973. The Municipal and Industrial Water System final environmental statement was filed with the Environmental Protection Agency October 25, 1979.

17/ Appropriations authorized are $2,188,060,000 (October 1986) for the Colorado River Storage Project under Public Law 84-485 and Public Law 92-370. The comparable Federal obligation is estimated to be $2,839,304,000, which would exceed the appropriation ceiling by more than the amount of contingencies included in the obligation. Appropriate congressional committees have been advised of the appropriation ceiling status for the project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $1,926,572, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 6

COMPLETED WORK:

Starvation Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 200 feet
Crest Length - 3,070 feet
Base Width - 855 feet

Spillway:
Type - Bathtub inlet chute
Design Discharge - 16,600 cubic feet per second

Reservoir Capacity:
Total Storage - 167,310 acre-feet

CONSTRUCTION PROGRAM:

Upper Stillwater Dam and Reservoir

Dam:
Type - Roller compacted concrete
Structural Height - 275 feet
Crest Length - 2,673 feet
Base Width - 177 feet

Spillway:
Type - Uncontrolled Ogee Crest
Design Discharge - 15,000 cubic feet per second

Reservoir Capacity:
Total Storage - 33,123 acre-feet

Currant Creek Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 177 feet
Crest Length - 1,600 feet
Base Width - 800 feet

Spillway:
Type - Rectangular conduit
Design Discharge - 850 cubic feet per second

Reservoir Capacity:
Total Storage - 15,670 acre-feet

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 7

Soldier Creek Dam, Strawberry Reservoir Enlargement, and Collection Works

Dam:
Type - Zoned earthfill
Structural Height - 265 feet
Crest Length - 1,290 feet
Base Width - 1,480 feet

Spillway: None

Reservoir Capacity:
Total Storage - 1,106,500 acre-feet

Tunnels:	Length (miles)	Diameter size (feet)	Capacity (cubic feet per second)
Water Hollow	4.1	10.33	620
Layout	3.3	10.33	620
Currant	1.7	10.33	620
Vat	7.3	8.25	475
Rhodes	0.8	7.75	325
Hades	4.2	7.75	305
Stillwater	8.1	7.50	285
Pipelines:			
West Fork	4.2	6.50	325
North Fork Siphon	0.8	6.00	305
Currant Creek	0.7	11.00	620
Wolf Creek Pipeline	1.0	7.00	325

Diversion Dams and Feeder Conduits: Six Structures - 5.3 miles of feeder conduit.

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 8

Mona Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 32 feet
Crest Length - 200 feet
Base Width - 85 feet

Spillway:
Type - Overflow
Design Discharge - 1,000 cubic feet per second

Reservoir Capacity:
Total Storage - 20,000 acre-feet

Goshen Bay Dike

Dam:
Type - Earthfill
Structural Height - 30 feet
Crest Length - 5.4 miles
Base Width - 500 feet

Spillway: Gated

Reservoir Capacity:
None

Jordanelle Dam and Powerplant

Dam:
Type - Zoned earthfill
Structural Height - 430 feet
Crest Length - 2,800 feet

Base Width - 1,675 feet

Spillway:
Type - Glory Hole
Design Discharge - 4,040 cubic feet per second

Reservoir Capacity:
Total Storage - 320,000 acre-feet

Powerplant:
Jordanelle - One generating unit - 10.4 megawatts   Generating Head - 242 feet

Switchyard: 14,000 kilovolt amperes

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 9

Jordan Aqueduct System

Tunnels:	Length (miles)	Diameter size (feet)	Capacity (cubic feet per second)
Alpine Aqueduct - Reach 1	0.4	7.5	450
Pipelines:			
Jordan Aqueduct - Reaches 1 and 2	15.0	6.5	270
Jordan Aqueduct - Reach 3	5.7	5.5	80
Jordan Aqueduct - Reach 4	16.9	6.0	270
Alpine Aqueduct - Reach 1	0.5	7.5	450
Alpine Aqueduct - Reach 2	4.7	3.5	35
Alpine Aqueduct - Reach 3	11.2	5.5	80

Pumping Plant

Jacob/Welby - Two Units - 100 cubic feet per second total capacity   255 feet vertical head

Rehabilitation of Duchesne River Area Canal System

Length - 66.5 miles   Capacity - Various cubic feet per second   Bottom Width - 2 to 12 feet   Water Depth - 0.96 to 4.7 feet

Wasatch Aqueduct

Tunnels:	Length (miles)	Diameter size (feet horseshoe)	Capacity (cubic feet per second)
No. 1 Tithing Mountain	0.6	8.0	325
No. 2 Loafer Mountain	4.1	8.0	325
No 3 Dry Mountain	1.6	8.0	325

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 10

Pipelines:
Length - 8.4 miles   Diameter - 7.5 feet   Capacity - 325 cubic feet per second

Pumping Plant:
Lincoln Point - Two Units - 150 cubic feet per second total capacity - 358 feet vertical head

Beer Creek Dike, Pumping Plant, Canal, and Laterals

Dike:
Type - Earthfill
Structural Height - 12 feet
Crest Length - 700 feet
Base Width - 70 feet

Pumping Plant:
Two Units - 250 cubic feet per second total capacity - 12 feet vertical head

Mona-Nephi Pumping Plants, Canal, and Laterals

Pumping Plants:
Mona - Four Units - 100 cubic feet per second total capacity - 265 feet vertical head
Nephi - Three Units - 150 cubic feet per second total capacity - 153 feet vertical head
West Mona - Two Units - 25 cubic feet per second total capacity - 157 feet vertical head

Canal:
Length - 22.6 miles   Capacity - 200 cubic feet per second

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 11

Elberta Canal and Laterals

Canal:
Length - 10.0 miles Capacity - 130 to 25 cubic feet per second
Pipelines:
Length - 2.1 miles Capacity - 130 cubic feet per second

Mosida Pumping Plants, Canals, and Laterals

Pumping Plants:

Lower	Capacity - 70 cubic feet per second	110 foot vertical head
Relift	Capacity - 30 cubic feet per second	163 foot vertical head
Mosida North	Capacity - 25 cubic feet per second	175 foot vertical head

Canal:
Length - 18.2 miles Capacity - 70 to 5 cubic feet per second

Nephi-Sevier Canal

Canal:
Length - 26.5 miles Capacity - 150 cubic feet per second

Provo Bay Associated Features

Dike:
Type - Earthfill
Structural Height - 24 feet
Crest Length - 7.2 miles
Base Width - 366 feet
Pumping Plants:
Irrigation - Three units at 25 cubic feet per second each
Two units at 12.5 cubic feet per second
Total Head - 18 feet
Drainage - Four units at 75 cubic feet per second each
Total Head - 24 feet
Canals:
Length - 11.6 miles Capacity - 100 to 20 cubic feet per second

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 12

Bonneville Basin Drains
Location and length to be determined by subsequent investigation.

Taylor Canal Area Drains
Location and length to be determined by subsequent investigation.

Diamond Fork Power System

Dams:	Spillways:	Reservoir Capacities:
Sixth Water Dam: Type - Earth and Rockfill Structural Height - 135 feet Crest Length - 500 feet	Type - Uncontrolled, open channel	Total Storage - 563 acre-feet
Syar Dams (two): Type - Earth and Rockfill Structural Height - 88 feet Crest Length - 2,030 feet and 1,210 feet	Type - Overflow	Total Storage - 944 acre-feet
Monks Hollow Dam: Type - Concrete Arch Structural Height - 250 feet Crest Length - 925 feet Base Width - 58 feet	Type - Overflow Design Discharge - 12,373 cubic feet per second	Total Storage - 31,414 acre-feet

Powerplants:

Sixth Water - Two Generating Units - 74.1 megawatts	Generating Head - 810 feet
Syar - One Generating Unit - 12.6 megawatts	Generating Head - 330 feet
Monks Hollow - One Generating Unit - 5.0 megawatts	Generating Head - 218 feet

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 13

Powerplants: (Continued)

Dyne - Two Generating Units - 67.6 megawatts Generating Head - 750 feet
Diamond Fork - One Generating Unit - 6.8 megawatts Generating Head - 305 feet

Tunnels:

Syar Tunnel:
Length - 6.5 miles Diameter - 8.25 feet Capacity - 600 cubic feet per second

Corona Aqueduct
Length - 0.9 miles Diameter - 11.75 feet for 0.7 miles Capacity - 1,300 cubic feet per second
10.0 for 0.2 miles (Each section)

Dyne Aqueduct
Length - 2.6 miles Diameter - 11.5 feet for 1.7 miles Capacity - 1,250 cubic feet per second
10.75 feet for 0.9 miles (Each Section)

Penstocks:

Syar:
Length - 1,130 feet Diameter - 8.5 feet Capacity - 600 cubic feet per second

Sixth Water:
Length - 1,620 feet Diameter - 7.5 feet Capacity - 1,300 cubic feet per second

Dyne:
Length - 2,650 feet Diameter - 7.75 Capacity - 1,250 cubic feet per second

Pipeline:

Diamond Fork:
Length - 6.9 miles Diameter - 9.0 feet Capacity - 450 cubic feet per second

Transmission Lines:

Syar Powerplant to Rays Valley Substaiton
0.8-mile, 13.8-kilovolt, overhead alternating-current transmission line

Monk's Hollow Powerplant to Dyne Powerplant
2.8-mile, 13.8-kilovolt, overhead alternating-current transmissions line

Transmission Lines: (continued)

Diamond Fork Powerplant to Spanish Fork Tap
0.5 mile of 46-kilovolt, overhead alternating-current transmission line

Sixth Water Powerplant to Ray's Valley Substation
0.6-mile, 138-kilovolt, overhead alternating-current transmission line

Dyne Powerplant to Ray's Valley Substation
4.4-mile, 138-kilovolt, overhead alternating-current transmission line

Ray's Valley Substation to interconnect system at Sheep Creek Substation
10-mile, 138-kilovolt, double-circuit overhead alternating-current transmission lines.

Switchyards:

Sixth Water Switchyard
Two 13.8/138 kV 3-phase transformers

Syar Switchyard
13.8 kV bus tie

Ray's Valley Substation
13.8/138 3-phase transformer
five 138 kV line bays
138 kV bus tie bay

Dyne Switchyard
13.8/138 3-phase transformer
Two 138 kV line bays
138 kV bus tie bay

Monk's Hollow Switchyard
6.6/13.8 kV 3-phase transformer
46 kV bus tie bay

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 15

Land and Rights

Quantity - 20,808 acres
Total Estimated Cost - 1/ $60,152,265
Cost per acre - $2,890
Acquisition - 16 percent complete as of September 30, 1985

Relocations

Total Estimated Cost - $133,745,000 2/
Percent Complete - 11 percent as of September 30, 1985

Items	Length (Miles)	Total cost	Costs to September 30, 1985
U.S. Highways	18.6	$ 86,249,000	$ 5,152,417
Utah State and County Highways	33.3	41,221,000	5,710,290
Forest Service Roads and Trails	12.3	3,785,000	3,264,973 3/
Various Electric, Telephone, Utilities, and Cemeteries	32.1	2,490,000	151,014
TOTAL		$133,745,000	$14,278,694

1/ Land and rights costs decreased due to dropping Grazing and Recreation Losses from the Soldier Creek program -2,420,000 and actual land costs at Soldier Creek are down -28,730; offset by indexing +893,000 and final land purchase at Jordan Aqueduct +69,353.

2/ Relocations total cost was increased by new estimate on highway relocations around Jordanelle Reservoir +31,350,000 and inclusion of utilities relocations at Soldier Creek for power lines +21,000 and telephone lines +13,000; offset by indexing changes -41,000; deleting Bryant Fork Ranger Station -225,000 because compensation has been provided; reducing Castle Cliff Campground relocation -16,000; and deleting Hobble Creek Diversion relocation -262,000 as part of the current Irrigation and Drainage System.

3/ The decrease in cost to date is the result of an overstatement in the FY 1986 Budget Justifications.

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

CENTRAL UTAH PARTICIPATING PROJECT
BONNEVILLE UNIT, UTAH - 16

FISCAL YEAR 1987

Work Proposed	Program
Upper Stillwater Dam and Reservoir. - Construction of Stage 2, Upper Stillwater Dam, and Doc's Diversion Dam and Feeder Pipeline will continue. Work will be completed on Sand Production for Upper Stillwater Dam. Preconstruction activities for future small contracts will continue.	$16,025,000
Currant Creek Dam and Reservoir. - Maintenance of Currant Creek Road will continue. Preconstruction activities will continue for road repair work.	51,000
Soldier Creek Dam, Strawberry Reservoir Enlargement, and Collection Works. - Work will continue on Rhodes Diversion Dam/Win Stream Inlet, Hades Creek Stream Inlet and on the Supervisory Controls. Work will be completed on Upper Stillwater Pipeline. Preconstruction activities for future small contracts will continue.	4,029,000
Mona Dam and Reservoir. -) Provides for preconstruction activities	20,000
Goshen Bay Dike. -)	100,000
Jordanelle Dam and Powerplant. - Contract will be awarded for relocating Highways 40 and 189. Provides for continuation of acquisition of land for the dam and reservoir. Work will be completed on the relocations of the natural gas line, the phone lines and the powerlines. Preconstruction activities will continue on Jordanelle Dam and Powerplant and on Upper Provo River Improvements.	38,249,000
Jordan Aqueduct System. - Contract will be awarded for construction of Alpine Aqueduct Reach 2. Land Acquisition for Alpine Aqueduct Reach 2 will be started and completed. Work will be completed on Jordan Aqueduct Reach 4 - Alpine Aqueduct Reach 3. Preconstruction activities will continue for Jacob Welby Pumping Plant.	4,066,000
Rehabilitation Duchesne River Area Canal System. - Work will continue on rehabilitation of Duchesne River Area Canal System.	15,830,000

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

CENTRAL UTAH PARTICIPATING PROJECT
BONNEVILLE UNIT, UTAH - 17

Wasatch Aqueduct and Laterals. -	Provides for preconstruction activities.	$ 128,000
Beer Creek Dike, Pump Plant, Canal and Laterals. -		125,000
Mona-Nephi Pumping Plants, Canal and Laterals. -		83,000
Elberta Canal and Laterals. -		10,000
Mosida Pumping Plants, Canals and Laterals. -		45,000
Nephi-Sevier Canal. -		10,000
Provo Bay Associated Features. -		62,000
Bonneville Basin Drains. -		5,000
Taylor Canal Area Drains. -	Construction of Block 2 Drains will be completed. Preconstruction activities for the remaining contracts will continue.	345,000
Diamond Fork Power System. -	Contract will be awarded for Access Road to Syar Tunnel. Preconstruction and design activities for the power system will continue.	4,362,000
Permanent Operating Facilities. -	Purchase of operating equipment will continue.	5,000
Service Facilities, Depreciation, and Salvage. -	Provides for acquisition of ADP equipment and heavy work equipment partially offset by depreciation charged to permanent features of the project.	243,000
	TOTAL	$83,793,000

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Completed Work 1/	$ 22,918,228	$ 22,918,228	$ ---	$ ---	$ ---
Construction Program					
Upper Stillwater Dam and Reservoir	133,824,000	70,016,278	32,134,000	16,025,000	15,648,722
Currant Creek Dam and Reservoir	30,655,000	27,733,042	183,000	51,000	2,687,958
Soldier Creek Dam, Strawberry Reservoir Enlargement, and Collection Works	300,990,000	283,707,260	9,932,000	4,029,000	3,321,740
Mona Dam and Reservoir	3,560,000	352,500	10,000	20,000	3,177,500
Goshen Bay Dike	94,974,000	4,306,217	100,000	100,000	90,467,783
Jordanelle Dam and Powerplant	421,933,000	15,959,581	26,417,000	38,249,000	341,307,419
Jordan Aqueduct System	90,979,000	58,224,040	16,582,000	4,066,000	12,106,960
Rehabilitation Duchesne River Area Canal System . .	38,806,320	4,622,323	6,483,000	15,830,000	11,870,997
Wasatch Aqueduct and Laterals	100,658,000	3,378,454	199,000	128,000	96,952,546
Beer Creek Dike, Pumping Plant, Canals, and Laterals	6,430,000	869,863	220,000	125,000	5,215,137
Mona-Nephi Pumping Plants, Canal, Laterals, and Switchyard	39,175,000	1,172,134	140,000	83,000	37,779,866
Elberta Canal and Laterals	11,144,000	147,710	10,000	10,000	10,976,290
Mosida Pumping Plants, Canals, and Laterals	19,673,000	526,654	45,000	45,000	19,056,346
Nephi-Sevier Canal	16,883,000	192,171	30,000	10,000	16,650,829
Provo Bay Associated Features	96,786,000	1,814,619	75,000	62,000	94,834,381
Bonneville Basin Drains	4,863,000	225,230	5,000	5,000	4,627,770
Taylor Canal Area Drains	2,454,000	934,454	396,000	345,000	778,546
Diamond Fork Power System	421,629,000	20,370,325	4,172,000	4,362,000	392,724,675
Permanent Operating Facilities	2,360,126	17,994	175,000	5,000	2,162,132
Operation and Maintenance Housing	1,644,000	---	---	---	1,644,000
Service Facilities, Depreciation, and Salvage . . .	-1,543,674	18,628,494	1,092,000	243,000	-21,507,168
Engineering and Design	(210,898,000)	(86,304,000)	(9,150,000)	(8,840,000)	(106,604,000)
Supervision and Administration	(187,782,368)	(67,207,728)	(9,014,502)	(8,879,658)	(102,680,480)

GPO 831-360

CENTRAL UTAH PARTICIPATING PROJECT, BONNEVILLE UNIT, UTAH - 2

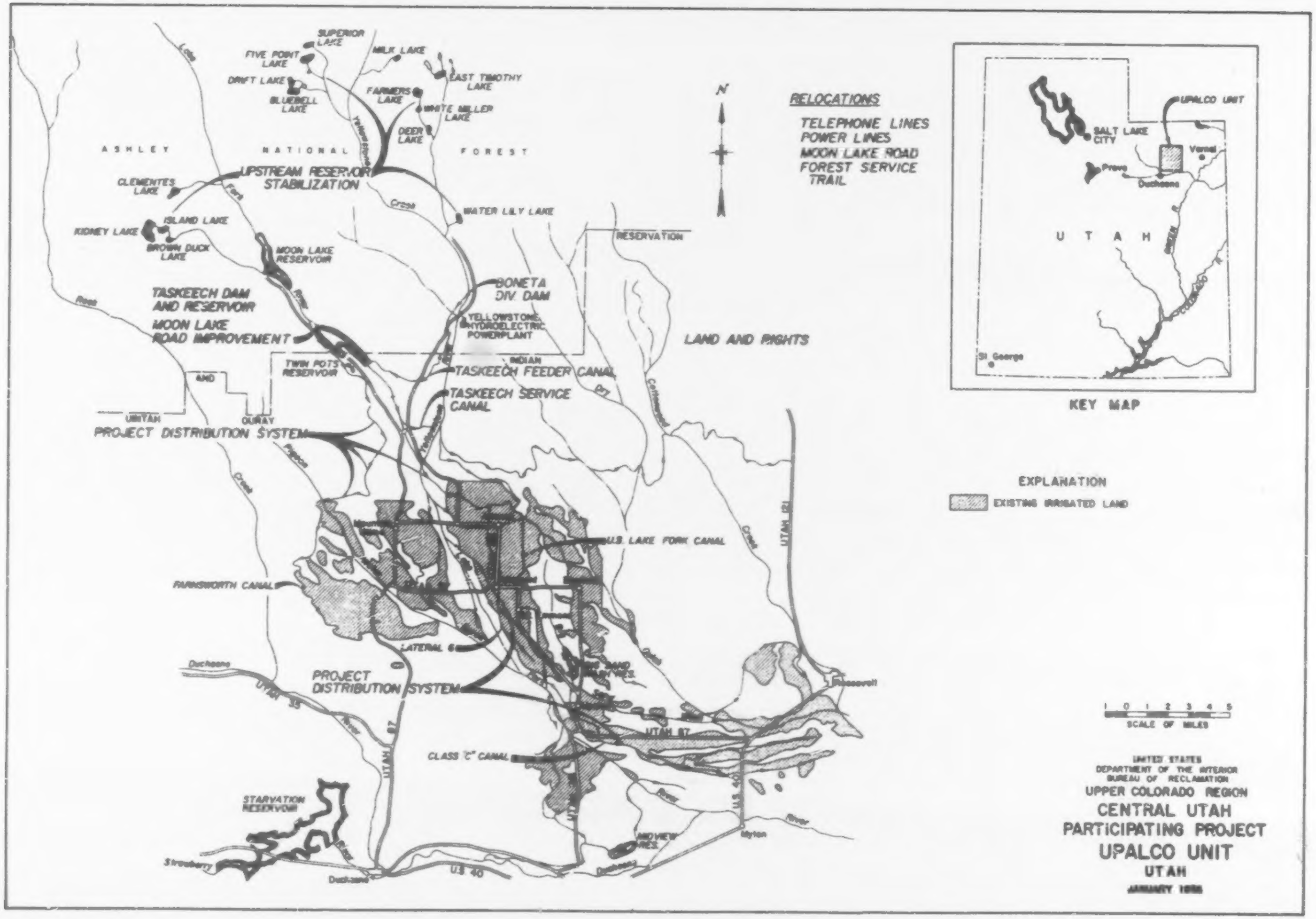
PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Relocation Costs	(133,745,000)	(14,278,694)	(1,720,000)	($29,440,000)	(88,306,306)
Total Construction	$1,860,795,000	$536,117,571	$98,400,000	$83,793,000	$1,142,484,429
Other Project Costs	2,513,000	2,264,298	208,000	---	40,702
Total Project Cost	$1,863,308,000	$538,381,869	$98,608,000	$83,793,000	$1,142,525,131
Consolidated Expenditures and Credits	-2,500,000	-2,005,636	-299	---	-494,065
Non-Federal Participation 2/.	-271,567,928	-5,968,928	-5,000,000	---	-260,599,000
Total Expenditures	$1,589,240,072	$530,407,305	$93,607,701	$83,793,000	$ 881,432,066
Undelivered Orders	---	28,234,701	-28,234,701	---	---
Total Obligations (Reclamation)	$1,589,240,072	$558,642,006	$65,373,000	$ 83,793,000	$ 881,432,066
Method of Financing					
Appropriation available and required	$ ---	$ ---	$ 44,804,000	$83,793,000	$881,432,066
Application of prior year funds	---	---	3,069,000	---	---
Underfinancing	---	---	17,500,000	---	---
Non-Federal participation:					
Cash	(271,567,928)	(5,968,928)	(5,000,000)	---	(260,599,000)

1/ Includes Starvation Dam and Reservoir and Duchesne Temporary Camp.

2/ Includes construction revenues of $928,928.


SUPERIOR LAKE
FIVE POINT LAKE
MILK LAKE
DRIFT LAKE
EAST TIMOTHY LAKE
BLUEBELL LAKE
FARMERS LAKE
WHITE MILLER LAKE
DEER LAKE
Yellowstone
Lake
ASHLEY NATIONAL FOREST
UPSTREAM RESERVOIR STABILIZATION
CLEMENTES LAKE
Fork
Cross
WATER LILY LAKE
ISLAND LAKE
KIDNEY LAKE
BROWN DUCK LAKE
MOON LAKE RESERVOIR
RESERVATION
BONETA DIV. DAM
TASKEECH DAM AND RESERVOIR
MOON LAKE ROAD IMPROVEMENT
YELLOWSTONE HYDROELECTRIC POWERPLANT
Rock
LAND AND RIGHTS
TWIN POTS RESERVOIR
INDIAN
TASKEECH FEEDER CANAL
AND
TASKEECH SERVICE CANAL
Dry
Cottonwood
UINTAH
OURAY
PROJECT DISTRIBUTION SYSTEM
Pigeon
Creek
U.S. LAKE FORK CANAL
Creek
UTAH 121
FARNSWORTH CANAL
LATERAL 6
Duchesne
PROJECT DISTRIBUTION SYSTEM
UTAH 35
River
Roosevelt
UTAH 87
CLASS "C" CANAL
River
U.S. 40
River
UTAH 87
STARVATION RESERVOIR
MIDVIEW RES.
Myton
Strawberry
Duchesne
U.S. 40
Duchesne
N
RELOCATIONS
TELEPHONE LINES
POWER LINES
MOON LAKE ROAD
FOREST SERVICE TRAIL
UPALCO UNIT
SALT LAKE CITY
Vernal
Provo
Duchesne
UTAH
GREEN R.
COLORADO R.
St George
KEY MAP
EXPLANATION
▨ EXISTING IRRIGATED LAND
1 0 1 2 3 4 5
SCALE OF MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION

CENTRAL UTAH
PARTICIPATING PROJECT
UPALCO UNIT
UTAH

JANUARY [illegible]

REGION
Upper Colorado

PROJECT DATA SHEET

PF-65 (2-84)
Bureau of Reclamation

PROJECT AND STATE CENTRAL UTAH PARTICIPATING PROJECT, UPALCO UNIT, UTAH	**Completion Date** 1/ 1996	**% Complete** 2	**Date** 1/31/86

AUTHORIZATION
Public Law 84-485, April 11, 1956; Public Law 92-370, August 10, 1972

LAND CERTIFICATION	**DEFINITE PLAN REPORT**
September 7, 1979	Approved June 20, 1969, Revised approved May 15, 1980, Supple. approved July 16, 1981

BENEFIT COST RATIOS		
Based on Direct Benefits	**Based on Total Benefits**	**Date**
2/ .9	2/ 1.0	10/1/86

SUMMARIZED FINANCIAL DATA

Total Federal Obligations (Reclamation)	13/	$123,504,000
Recreational-Fish and Wildlife	3/ 13/	6,952,000
Net Property and Other Transfers:		
Federal Participation		72,000
Non-Federal Participation		
Adjustment	4/	1,198,000
Total to be Allocated		$131,726,000

Allotments to September 30,	1985		$12,270,239
Allotments for FY	1986	a/	2,612,000
Allotments to Date			14,882,239
Allotments Required for FY	1987		50,000
Balance to Complete after FY	1987		$108,571,761

ALLOCATIONS 5/	
Irrigation	$ 57,748,000
Power	
M & I Water	15,688,000
Recreation	3,011,000
F & WL	53,458,000
Flood Control	716,000
Hwy Improvement	1,105,000
Other	
Total	$131,726,000

REPAYMENT		
Amount Repaid by Irrigators	6/	6,300,000
Amount Repaid by Power		
Amount Repaid by M & I Water	7/	10,348,000
Amt Repaid by UCRBF	8/	50,467,000
By CRDF	9/	40,000
By Ad Valorem Tax	10/	5,331,000
Amount Deferred under Leavitt Act	11/	950,000
Nonreimbursable	12/	58,290,000
Total		$131,726,000

AMOUNTS PER ACRE			
Irrig. Invest. per Acre	$1,355	Payment Capacity per Acre	$4.05
Repayment of Investment per Acre:		Annual Charges:	
By Irrigators	148	O & M	0.65
By Power Revenues	1,184	Construction	3.40
By M & I Water Users			
By CRDF	1		
Deferred under Leavitt Act	22		
		Total	$4.05

STATUS OF REPAYMENT CONTRACT: Repayment contract with Central Utah Water Conservancy District executed August 27, 1981, and validated September 29, 1981.

STATUS OF NEPA COMPLIANCE: Projectwide final environmental statement was filed with Environmental Protection Agency March 12, 1980.

DESCRIPTION: The Upalco Unit of the Central Utah Project is located in Duchesne County near Roosevelt, Utah, on the Lake Fork and Yellowstone Rivers. This is a multipurpose project which will supply supplemental irrigation water to approximately 34,109 acres of non-Indian lands and 8,501 acres of Indian lands. Recreation, fish and wildlife, and flood control benefits will also result from the project. 3,000 acre-feet of municipal and industrial water will be provided for the city of Roosevelt and other communities within the project area.

PROJECT DATA SHEET - 2
Central Utah Participating Project, Upalco Unit, Utah

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in fiscal year 1962 and for construction in fiscal year 1980. A second repayment contract with the Indian tribes is pending an independent feasibility study for which the Ute Indian Tribal Council has contracted separately with a private consultant. The Upalco Unit can proceed under the existing Central Utah Water Conservancy District contract and under the provisions of the Leavitt Act. The Bureau of Reclamation entered into an agreement in November 1982 with the Ute Tribal Business Committee that allows Reclamation to proceed with the engineering studies and surveys which are necessary to prepare design data for the planning and construction of the Upalco Unit.

Footnotes:

1/ Project facilities are scheduled to be completed in 1996. Four year delay is due to continuing negotiations with the Indians regarding acquisition of land.

2/ Changed from 1.1 direct and 1.2 total as presented in the FY 1986 Budget Justifications to .9 direct and 1.0 total. The changes were due to costs increasing during the year much more than the benefits. The ratios were computed by using the authorized interest rate of 3.25 percent.

3/ Represents costs of specific fish and wildlife facilities, $3,941,000, and specific recreation facilities, $3,011,000.

4/ Represents reimbursable interest during construction allocated to municipal and industrial water.

5/ Explanation of changes in allocations from fiscal year 1986 Budget Justifications:

Allocation	FY 1986 estimate	FY 1987 estimate
Irrigation	$ 40,058,000	$ 57,748,000
Municipal and Industrial Water	14,275,000	15,688,000
Recreation	3,107,000	3,011,000
Fish and Wildlife	42,642,000	53,458,000
Flood Control	523,000	716,000
Highway Improvement	766,000	1,105,000
Total	$101,371,000	$131,726,000

PROJECT DATA SHEET - 3
Central Utah Participating Project, Upalco Unit, Utah

Footnotes: (continued)

Explanation of Changes	Amount of Change
Reanalysis of unit prices for Taskeech Dam, Boneta Diversion Dam and Canals	+21,444,000
Replacement of Taskeech Feeder and Service Canal with Taskeech Pipeline	+9,174,000
Realignments and reanalysis of unit prices for Moon Lake Road Relocation, Moon Lake Road Improvements, and the telephone line and powerline relocations	+1,043,000
Indexing	+5,000
Reimbursable interest during construction	-1,203,000
Replace O&M Warehouse with use of Field Station	-108,000
Total	+30,355,000

Increase of allocations to irrigation and fish and wildlife are due to reanalysis of unit prices for Taskeech Dam; Boneta Diversion Dam, Canals, realignments for Moon Lake Road Relocation and Improvement, telephone line and powerline relocations, replacement of O&M warehouse and indexing.

6/ The scheduled amount to be repaid is covered by existing contract with the Central Utah Water Conservancy District.

7/ One-half of the amount to be repaid is covered by an existing contract with the Central Utah Water Conservancy District. The repayment of the other one-half of the water supply has been deferred under provision of the Water Supply Act. The Central Utah Water Conservancy District has passed a resolution asking for the additional one-half of the municipal and industrial water supply based upon need within a 10-year period.

8/ From Upper Colorado River Basin Fund revenues apportioned for use in the State of Utah as generated by Colorado River Storage Project Power Rate Schedule (SP-F1) effective on or after January 23, 1981.

9/ Includes $31,000 for irrigation costs and $9,000 for municipal and industrial water costs.

PROJECT DATA SHEET - 4
Central Utah Participating Project, Upalco Unit, Utah

Footnotes: (continued)

10/ For municipal and industrial water costs.

11/ Deferred payment associated with Indian-owned land under the Leavitt Act, 25 U.S.C. 386a.

12/ Includes allocations of $53,458,000 to fish and wildlife, $3,011,000 to recreation, $716,000 to flood control, and $1,105,000 for relocation of highways to higher standards (Public Law 87-874 as amended by Public Law 93-251).

13/ Appropriations authorized are $2,188,060,000 (October 1986) for the Colorado River Storage Project under Public Law 84-485 and Public Law 92-370. The comparable Federal obligation is estimated to be $2,839,304,000, which would exceed the appropriation ceiling by more than the amount of contingencies included in the obligations. Appropriate congressional committees have been advised of the appropriation ceiling status for the project. Legislation to provide additional appropriation ceiling will be submitted to the Congress. Current commitments will be held within the existing ceiling.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $112,316, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and/or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

CENTRAL UTAH PROJECT, UPALCO UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 5

CONSTRUCTION PROGRAM:

Taskeech Dam and Reservoir

Dam:
Type - Zoned earthfill
Structural Height - 220 feet 1/
Crest Length - 1,500 feet 2/

Spillway:
Type - Uncontrolled side channel 3/
Design Discharge - 21,300 cubic feet 3/ per second

Reservoir Capacity:
Total Storage - 78,400 acre-feet

Boneta Diversion Dam   Capacity - 250 cubic feet per second
Taskeech Pipeline 4/   Length - 9 miles 4/   Capacity - 250 cubic feet per second

Project Distribution System 4/	Length (miles)	Capacity (cubic feet per second)
Farnsworth Canal Reach 1	4.0	180
Farnsworth Canal Reach 2	1.1	140
Farnsworth Canal Reach 3	1.2	90
U.S. Lake Fork Canal	1.7	180
Class C Canal	1.6	110
Lateral 6	1.1	25

Upstream Reservoir Stabilization
14 reservoirs (reversion to natural lakes)

1/ Increased from amount presented in FY 1986 Budget Justifications to reflect current plan.
2/ Decreased from amount presented in FY 1986 Budget Justifications to reflect current plan.
3/ Design of the spillway was changed from an uncontrolled chute as presented in the FY 1986 Budget Justifications to an uncontrolled side channel with an increased discharge capacity.
4/ Taskeech Feeder Canal and Taskeech Service Canal have been replaced by Taskeech Pipeline which will serve as part of the collection and distribution system by having the capability to reverse flows.

CENTRAL UTAH PROJECT, UPALCO UNIT, UTAH

PHYSICAL DATA ON STRUCTURES - 6

Land and Rights
Quantity - 1,539 acres 1/
Total estimated cost - $3,721,000 2/
Cost per acre - $2,418
Acquisition - 1 percent completed as of September 30, 1985 3/

Relocations
Total Estimated Cost - $2,740,000 4/
Percent Complete - 0 percent as of September 30, 1985

Items:	Length (miles)	Total cost	Costs to September 30, 1985
Telephone Line	1.8	$ 8,000	---
Powerline	1.8	435,000	---
Moon Lake Road Relocation	3.6	2,297,000	---
TOTAL		$2,740,000	---

1/ Decrease due to replacement of Taskeech Service Canal with Taskeech Pipeline.
2/ Increase due to reanalysis of unit prices for Taskeech Dam Land.
3/ Decrease of percent completed as shown in fiscal year 1986 Budget Justification due to correction.
4/ Increase due to new alignments, and reanalysis of quantities and unit prices.

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

CENTRAL UTAH PARTICIPATING PROJECT, UPALCO UNIT - 7

FISCAL YEAR 1987

Work Proposed	Program
Taskeech Dam, Reservoir, and Collection Works - Negotiations with the Indians will continue for acquisition of land.	$50,000
TOTAL	$50,000

CENTRAL UTAH PARTICIPATING PROJECT, UPALCO UNIT, UTAH

PF-40 (10-76)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Taskeech Dam Reservoir and Collection Works	$115,583,000	$10,075,810	$4,066,000	$50,000	$101,391,190
Project Distribution System	6,965,000	246,313	25,000	---	6,693,687
Permanent Operating Facilities	47,000	---	---	---	47,000
Upstream Reservoir Stabilization	981,000	75,847	---	---	905,153
Service Facilities, Depreciation, and Salvage . . .	---	127,054	285,000	---	-412,054
Engineering and Design	(15,577,930)	(10,134,930)	(2,295,000)	(50,000)	(3,098,000)
Supervision and Administration	(14,617,070)	(187,227)	(223,813)	(---)	(14,206,030)
Relocation Costs	(2,740,000)	---	---	---	(2,740,000)
Total Construction Cost	$123,576,000	$10,525,024	$4,376,000	$50,000	$108,624,976
Total Project Cost	$123,576,000	10,525,024	4,376,000	$50,000	108,624,976
Consolidated Expenditures and Credits	-72,000	-19,278	493	---	-53,215
Total Expenditures	$123,504,000	10,505,746	4,376,493	$50,000	108,571,761
Undelivered Orders	---	81,493	-81,493	---	---
Total Obligations (Reclamation)	$123,504,000	10,587,239	4,295,000	$50,000	108,571,761
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$2,612,000	$50,000	$108,571,761
Application of prior year funds	---	---	1,683,000	---	---

GPO 831-300

Appropriation Title: Construction Program
Upper Colorado River Basin Fund

DRAINAGE AND MINOR CONSTRUCTION PROGRAM

Summarized Financial Data:

Fiscal Year 1986:

Appropriation	$1,216,000	
Application of Prior Year Funds	957,000	
Total Obligations, FY 1986		$2,173,000

Fiscal Year 1987:

Estimate of Appropriation	$1,325,000	
Total Obligations, FY 1987		$1,325,000

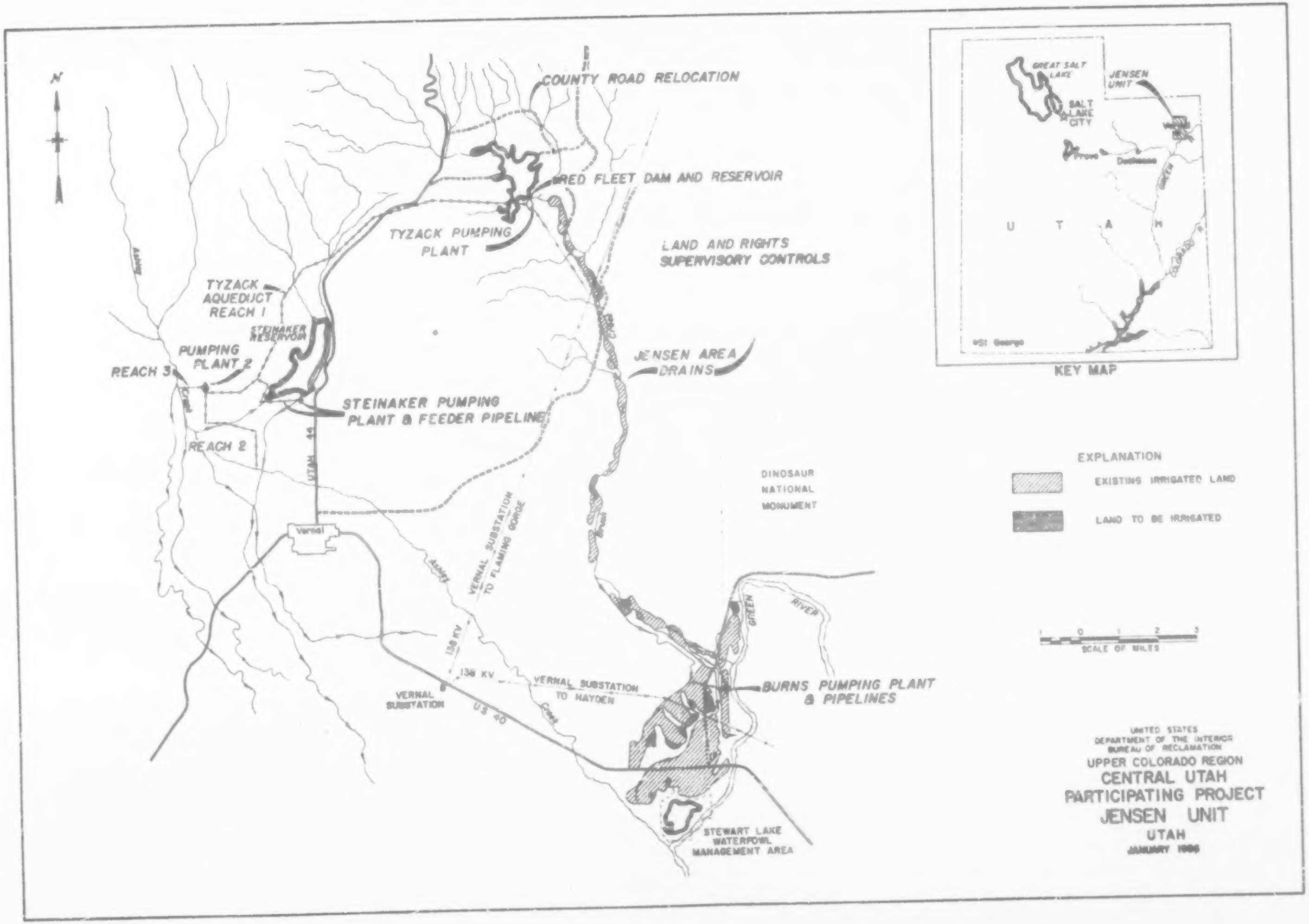
Description: The drainage and minor construction category includes units and participating projects of the Upper Colorado River Storage Project on which major construction has been completed, except for facilities temporarily deferred or for which relatively small amounts of funds are being requested in the budget year for drainage construction, minor repair or replacement work, miscellaneous finishing activities, or preconstruction work on the temporarily deferred facilities.

The program involves work on two units.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for the Jensen Unit in FY 1986 will be reduced by $52,288, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

FISCAL YEAR 1987

Work Proposed	Program
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987	
Units	
Modifications and Additions to Completed Facilities, Various:	
Wayne N. Aspinall Storage Unit, Colorado - Provides for final design work on the Crystal Powerplant addition, purchase of a storage building, and for purchase of permanent operating equipment which will include a crane and emergency generator.	$ 765,000


N
COUNTY ROAD RELOCATION
RED FLEET DAM AND RESERVOIR
TYZACK PUMPING PLANT
LAND AND RIGHTS SUPERVISORY CONTROLS
TYZACK AQUEDUCT REACH 1
STEINAKER RESERVOIR
PUMPING PLANT 2
REACH 3
JENSEN AREA DRAINS
STEINAKER PUMPING PLANT & FEEDER PIPELINE
REACH 2
UTAH 44
Ashley
Creek
Vernal
VERNAL SUBSTATION TO FLAMING GORGE
138 KV
VERNAL SUBSTATION TO HAYDEN
VERNAL SUBSTATION
US 40
DINOSAUR NATIONAL MONUMENT
GREEN RIVER
BURNS PUMPING PLANT & PIPELINES
STEWART LAKE WATERFOWL MANAGEMENT AREA
GREAT SALT LAKE
SALT LAKE CITY
JENSEN UNIT
Provo
Duchesne
Vernal
U T A H
St. George
KEY MAP
EXPLANATION
EXISTING IRRIGATED LAND
LAND TO BE IRRIGATED
SCALE OF MILES
1 0 1 2 3
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
CENTRAL UTAH
PARTICIPATING PROJECT
JENSEN UNIT
UTAH
JANUARY 1986

Appropriation Title: Construction Program
Upper Colorado River Basin Fund
Drainage and Minor Construction - 2

FISCAL YEAR 1987

Work Proposed	Program
Units	
Modifications and Additions to Completed Facilities, Various: (continued)	
Flaming Gorge, Wyoming-Utah - Provides for the purchase of permanent operating equipment.	$ 30,000
Glen Canyon, Arizona-Utah - Purchase of permanent operating equipment will be continued which will include a compressor system.	227,000
PROJECTS ADDED TO THE D&MC CATEGORY DURING FY 1987	
Participating Projects	
Central Utah Participating Project	
Jensen Unit, Utah - Provides for installation of the supervisory controls and the supervisory control cable.	303,000
TOTAL PROGRAM	$1,325,000

UPPER COLORADO RIVER BASIN FUND - DRAINAGE AND MINOR CONSTRUCTION

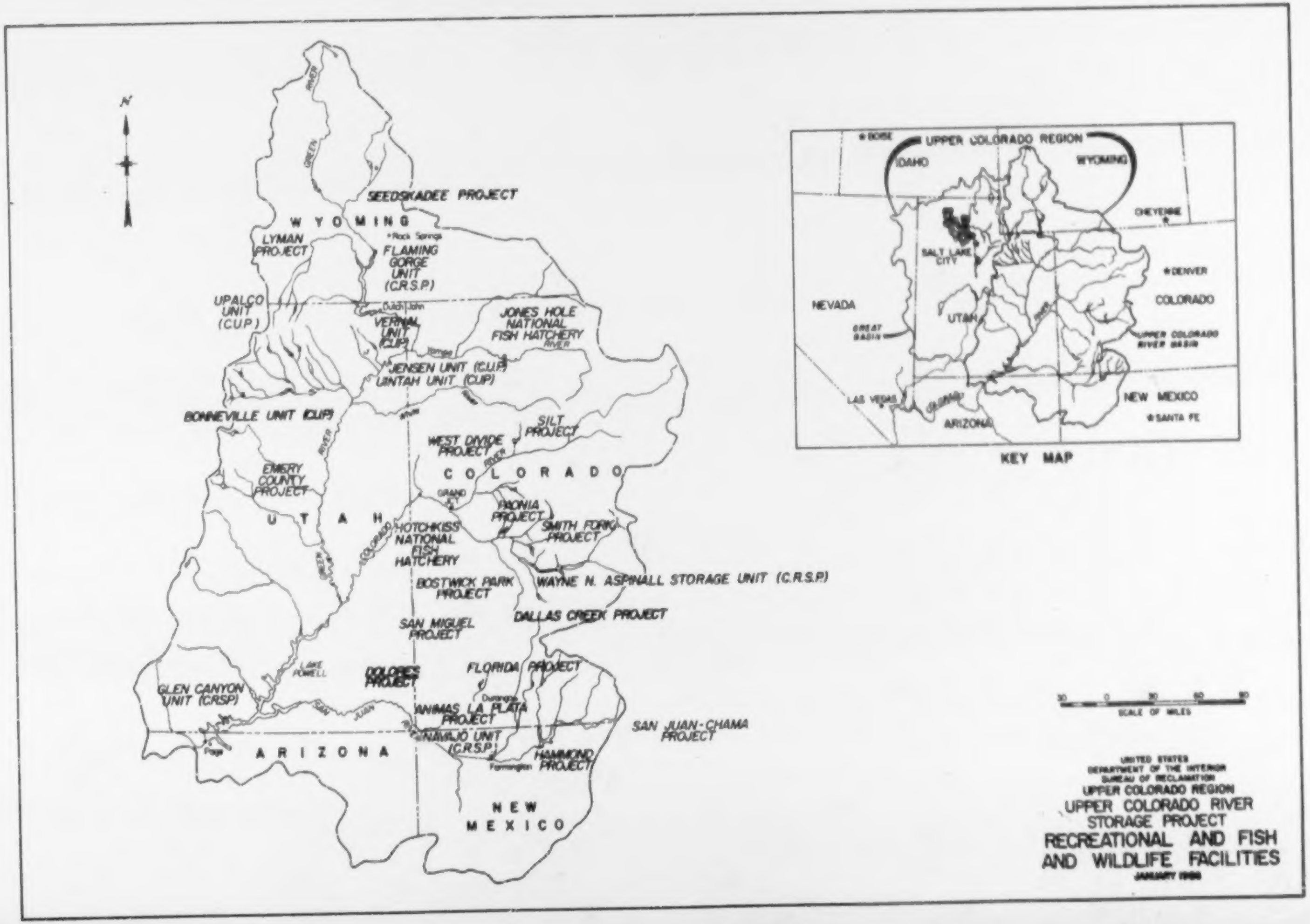
PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
PROJECTS INCLUDED IN DRAINAGE AND MINOR CONSTRUCTION CATEGORY PRIOR TO FY 1987					
Units					
Modifications and Additions to Completed Facilities - Various	$ 24,063,000	$ 12,566,919	$1,477,000	$1,022,000	$ 8,997,081
Participating Projects					
Lyman Project	$ 32,631,372	$ 32,621,372	$ 10,000	$ ---	---
Subtotal - Drainage and Minor Construction Prior to FY 1987.	$ 56,694,372	$ 46,188,291	$1,487,000	$1,022,000	$ 8,997,081
PROJECTS ADDED TO THE DRAINAGE AND MINOR CONSTRUCTION CATEGORY DURING FY 1987					
Participating Projects					
Central Utah Project - Jensen Unit, Utah	$ 76,213,000	$ 58,769,370	$1,672,000	$ 303,000	$15,468,630
Subtotal - Addition Projects	$ 76,213,000	$ 58,769,370	$1,672,000	$ 303,000	$15,468,630
Total Obligations (Reclamation)	$132,907,372	$103,957,661	$3,159,000	$1,325,000	$24,465,711
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$1,216,000	$1,325,000	$24,465,711
Application of prior year funds	---	---	957,000	---	---
Underfinancing	---	---	986,000	---	---

GPO 831-380

RECREATIONAL AND FISH AND WILDLIFE


N
SEEDSKADEE PROJECT
WYOMING
Rock Springs
LYMAN PROJECT
FLAMING GORGE UNIT (C.R.S.P.)
UPALCO UNIT (C.U.P.)
Dutch John
VERNAL UNIT (CUP)
JONES HOLE NATIONAL FISH HATCHERY
GREEN RIVER
JENSEN UNIT (C.U.P.)
UINTAH UNIT (CUP)
BONNEVILLE UNIT (CUP)
SILT PROJECT
WEST DIVIDE PROJECT
EMERY COUNTY PROJECT
COLORADO
GRAND JCT.
PAONIA PROJECT
SMITH FORK PROJECT
UTAH
HOTCHKISS NATIONAL FISH HATCHERY
BOSTWICK PARK PROJECT
WAYNE N. ASPINALL STORAGE UNIT (C.R.S.P.)
DALLAS CREEK PROJECT
SAN MIGUEL PROJECT
LAKE POWELL
DOLORES PROJECT
FLORIDA PROJECT
GLEN CANYON UNIT (CRSP)
SAN JUAN
Durango
ANIMAS LA PLATA PROJECT
SAN JUAN-CHAMA PROJECT
NAVAJO UNIT (C.R.S.P.)
Page
ARIZONA
Farmington
HAMMOND PROJECT
NEW MEXICO
BOISE
UPPER COLORADO REGION
IDAHO
WYOMING
CHEYENNE
SALT LAKE CITY
DENVER
NEVADA
COLORADO
UTAH
GREAT BASIN
UPPER COLORADO RIVER BASIN
NEW MEXICO
LAS VEGAS
ARIZONA
SANTA FE
KEY MAP
30 0 30 60 90
SCALE OF MILES
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
UPPER COLORADO REGION
UPPER COLORADO RIVER STORAGE PROJECT
RECREATIONAL AND FISH AND WILDLIFE FACILITIES

COLORADO RIVER STORAGE PROJECT
RECREATIONAL AND FISH AND WILDLIFE FACILITIES

General Statement

Summarized Financial Data:

Fiscal Year 1986:

Appropriation:

Recreational Facilities	$4,550,000	
Fish and Wildlife Facilities	1,155,000	
Application of Prior Year Funds	751,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	a/	
Total Obligations, FY 1986		$ 6,456,000

Fiscal Year 1987:

Estimate of Appropriations:

Recreational Facilities	$ 8,747,000	
Fish and Wildlife Facilities	4,018,000	
Total Obligations, FY 1987		$12,765,000

Section 8 of the Colorado River Storage Act, approved April 11, 1956, authorized and directed the Secretary to investigate, plan, construct, operate, and maintain (1) public recreational facilities on lands withdrawn or acquired for the development of the Colorado River Storage Project, or participating projects, to conserve the scenery; the natural, historic, and archeological objects; and the wildlife on said lands and to provide for the public use and enjoyment of the same and of the water areas created by these projects by such means as are consistent with the primary purposes of said projects and (2) facilities to mitigate losses of, and improve conditions for, the propagation of fish and wildlife.

The Bureau of Reclamation has authority for continuing work on most recreational and fish and wildlife facilities of the storage project. Development and construction of recreational areas having national significance are the responsibility of the National Park Service except Flaming Gorge Reservoir which is the responsibility of the Forest Service. Fish hatcheries and wildlife refuges are a responsibility of the Fish and Wildlife Service. Funds for the development of these areas are provided by the Bureau of Reclamation until they are designated by the Congress as National Recreation Areas or National Wildlife Refuges.

RECREATIONAL AND FISH AND WILDLIFE FACILITIES

General Statement - 2

The total appropriation request of $12,765,000 provides for continuation of work on four projects. The investment through September 30, 1985, at public use areas created by the Colorado River Storage Project Act totaled $147 million. In 1984, about 3 million fish were produced by the two fish hatcheries constructed as a part of the project. There were 6.1 million visitations at the 20 completed Colorado River Storage Project reservoirs during the 1984 recreation season.

Details of the fiscal year 1987 program are included on the pages which follow.

---

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $245,315, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, and or power delivery dates or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

Appropriation Title: Construction Program

RECREATIONAL AND FISH AND WILDLIFE FACILITIES, ARIZONA, COLORADO, NEW MEXICO, UTAH, AND WYOMING - 3

FISCAL YEAR 1987

Work Proposed	Program
Central Utah Project, Bonneville Unit, Utah	
Recreational Facilities - Work will continue on the Administrative Complex at Strawberry Reservoir. A contract will be awarded and completed for improvements at the Soldier Creek Recreation Area.	$1,064,000
Fish and Wildlife Facilities - Land acquisition activities will continue for the Collection System. Fishery and big game mitigation studies will continue.	3,478,000
Dallas Creek Project, Colorado	
Recreational Facilities - Construction of recreation facilities at Ridgway Dam will be completed. Construction of Ridgway Reservoir Recreation Facilities will be continued.	5,421,000
Dolores Project, Colorado	
Recreational Facilities - Construction of Housecreek Recreation and fishing access sites will be completed. Construction will continue on paving the Dolores-Norwood-May Canyon Road. Construction will begin on the Dolores River Access Facility Number 1.	2,262,000
Seedskadee Project, Wyoming	
Fish and Wildlife Facilities - Development of the National Wildlife Refuge will continue.	540,000
TOTAL	$12,765,000

Appropriation Title: Construction Program
Recreational and Fish and Wildlife Facilities - 4

FISCAL YEAR 1987

Explanation of Change in Total Obligations:

1986 Justification.	$352,041,943
1987 Estimates	360,006,104
Increase	$ +7,964,161

Explanation of changes	Project plan changes	Change due to cost indexing	Total change
Wayne N. Aspinall Unit - Increase due to quantity overruns at Ponderosa Campground.	$ +870,000	$ --	$ +870,000
Bonneville Unit - Increase is due to indexing +1,049,381; actual land costs +6,526; modifications on one contract +70,979; new estimates on four contracts +1,652,245; addition of four new contracts +694,440; increases in contingencies +883,041 and overhead +80,942; partially offset by final voucher on two contracts -97,554; and by new estimates on four contracts -1,599,000.	+1,691,619	+1,049,381	+2,741,000
Dallas Creek - Increase due to the following: reanalysis of quantities and unit prices +3,997,582; indexing +373,000; partially offset by a reanalysis of noncontract requirements -525,582.	+3,472,000	+373,000	+3,845,000
Dolores Project - Increase due to indexing $548,000 partially offset by new estimates by combining mitigation measures $-414,000.	-414,000	+548,000	+134,000
Seedskadee Project - Increase is due to indexing $229,000 and to actual costs exceeding estimates on the National Wildlife Refuge $1,028,305; partially offset by deletion of recreation work $-549,662, and decrease of $-13,683 due to actual costs.	+420,000	+229,000	+649,000
Other Units and Projects - Decrease due to new cost estimates, Upalco Unit -2,630,387; partially offset by increase for cost indexing +1,839,935.	-2,630,387	+2,355,548	-274,839
Increase	$ +3,409,232	$+4,554,929	$+7,964,161

RECREATIONAL AND FISH AND WILDLIFE FACILITIES

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Construction Program					
Central Utah Project -					
Bonneville Unit - Utah					
Recreational Facilities	62,641,000	26,697,117	1,127,000	1,064,000	33,752,883
Fish and Wildlife Facilities	67,871,000	9,109,781	1,230,000	3,478,000	54,053,219
Subtotal - Bonneville Unit	$130,512,000	$35,806,898	$2,357,000	$4,542,000	$ 87,806,102
Dallas Creek Project - Colorado					
Recreational Facilities	26,991,722	12,682,232	2,459,000	5,421,000	6,429,490
Fish and Wildlife Facilities	2,457,278	1,761,145	---	---	696,133
Subtotal - Dallas Creek Project	$ 29,449,000	$14,443,377	$2,459,000	$5,421,000	$ 7,125,623
Dolores Project - Colorado					
Recreational Facilities	15,532,000	9,253,320	1,628,000	2,262,000	2,388,680
Fish and Wildlife Facilities	11,938,000	3,496,608	21,000	---	8,420,392
Subtotal - Dolores Project	$ 27,470,000	$12,749,928	$1,649,000	$2,262,000	$ 10,809,072
Seedskadee Project - Wyoming					
Recreational Facilities	636,378	636,378	---	---	---
Fish and Wildlife Facilities.	23,235,622	7,422,511	11,000	540,000	15,262,111
Subtotal - Seedskadee.	$ 23,872,000	$ 8,058,889	$ 11,000	$ 540,000	$ 15,262,111
Completed Work - Various States					
Recreational Facilities	11,995,986	11,995,986	---	---	---
Fish and Wildlife Facilities	2,103,864	2,103,864	---	---	---
Subtotal - Completed Work	$ 14,099,850	$14,099,850	$ ---	$ ---	$ ---

GPO 881-380

RECREATIONAL AND FISH AND WILDLIFE FACILITIES

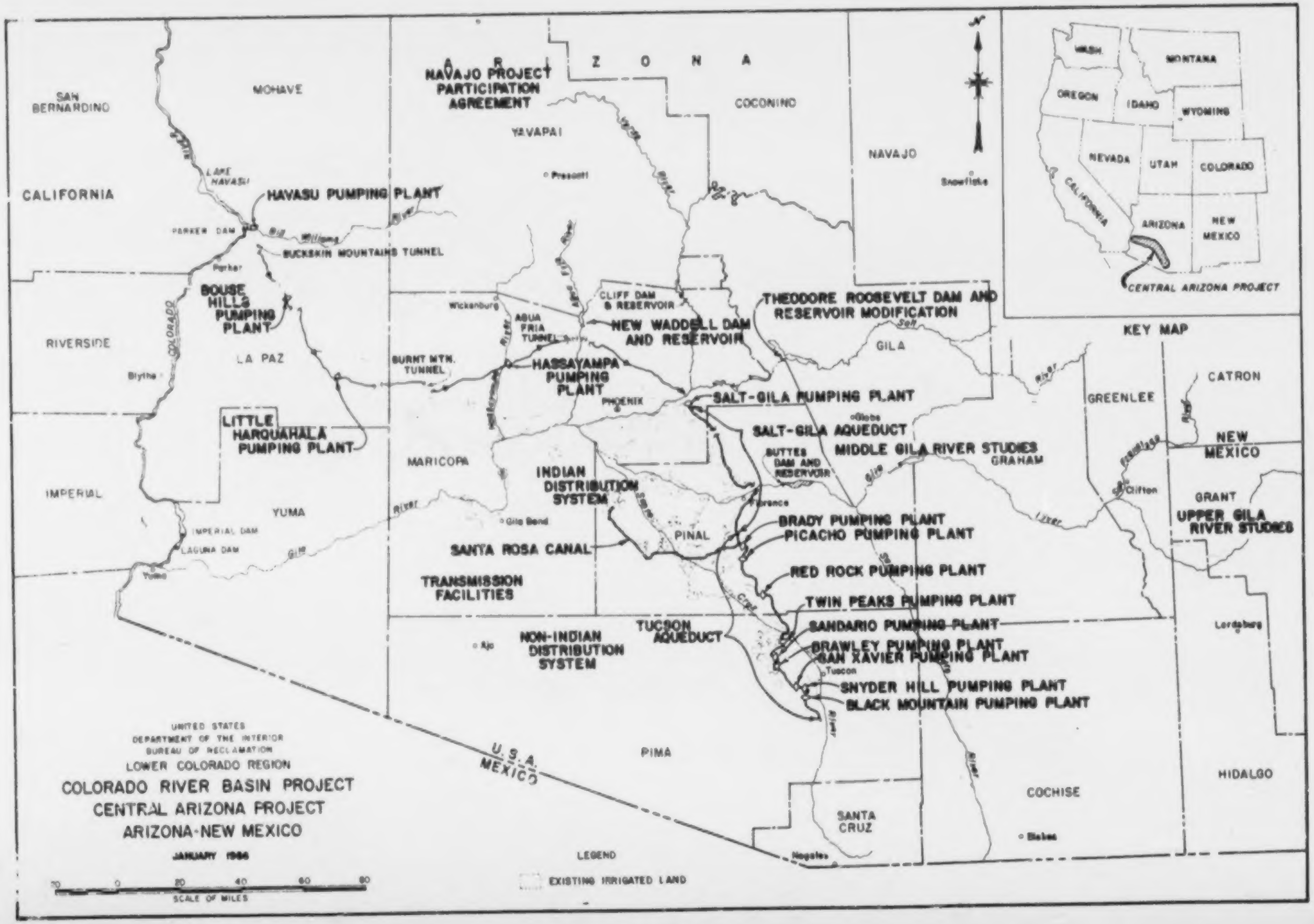
PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
Future Construction - Various States					
Recreational Facilities	59,444,680	36,567,680	---	---	22,877,000
Fish and Wildlife Facilities	75,158,574	26,090,761	---	---	49,067,813
Subtotal - Future Construction	$134,603,254	$62,658,441	$ ---	$ ---	$ 71,944,813
Summary					
Recreational Facilities	177,241,766	97,832,713	5,214,000	8,747,000	65,448,053
Fish and Wildlife Facilities	182,764,338	49,984,670	1,262,000	4,018,000	127,499,668
Total Obligations (Reclamation) All Projects	$360,006,104	$147,817,383	$6,476,000	$12,765,000	$192,947,721
Method of Financing:					
Appropriation available and required	$ ---	$ ---	$ 5,705,000	$12,765,000	$192,947,721
Application of prior year funds	---	---	751,000	---	---
Underfinancing	---	---	20,000	---	---

GPO 831-360

COLORADO RIVER BASIN


UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
LOWER COLORADO REGION
COLORADO RIVER BASIN PROJECT
CENTRAL ARIZONA PROJECT
ARIZONA-NEW MEXICO
JANUARY 1966
20 0 20 40 60 80
SCALE OF MILES
LEGEND
EXISTING IRRIGATED LAND
KEY MAP
WASH.
MONTANA
OREGON
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO
CENTRAL ARIZONA PROJECT
A R I Z O N A
NAVAJO PROJECT PARTICIPATION AGREEMENT
SAN BERNARDINO
MOHAVE
YAVAPAI
COCONINO
NAVAJO
CALIFORNIA
RIVERSIDE
LA PAZ
IMPERIAL
YUMA
MARICOPA
GILA
PINAL
GRAHAM
GREENLEE
CATRON
NEW MEXICO
GRANT
PIMA
SANTA CRUZ
COCHISE
HIDALGO
Prescott
Snowflake
Globe
Wickenburg
Phoenix
Parker
Blythe
Gila Bend
Florence
Clifton
Ajo
Tucson
Nogales
Bisbee
Yuma
Lordsburg
LAKE HAVASU
PARKER DAM
IMPERIAL DAM
LAGUNA DAM
Colorado
Bill Williams River
Verde River
Salt River
Gila River
Agua Fria River
San Pedro River
Santa Cruz River
San Francisco River
HAVASU PUMPING PLANT
BUCKSKIN MOUNTAINS TUNNEL
BOUSE HILLS PUMPING PLANT
LITTLE HARQUAHALA PUMPING PLANT
BURNT MTN. TUNNEL
AGUA FRIA TUNNEL
CLIFF DAM & RESERVOIR
NEW WADDELL DAM AND RESERVOIR
HASSAYAMPA PUMPING PLANT
THEODORE ROOSEVELT DAM AND RESERVOIR MODIFICATION
SALT-GILA PUMPING PLANT
SALT-GILA AQUEDUCT
BUTTES DAM AND RESERVOIR
MIDDLE GILA RIVER STUDIES
INDIAN DISTRIBUTION SYSTEM
BRADY PUMPING PLANT
PICACHO PUMPING PLANT
SANTA ROSA CANAL
RED ROCK PUMPING PLANT
TRANSMISSION FACILITIES
TWIN PEAKS PUMPING PLANT
TUCSON AQUEDUCT
SANDARIO PUMPING PLANT
NON-INDIAN DISTRIBUTION SYSTEM
BRAWLEY PUMPING PLANT
SAN XAVIER PUMPING PLANT
SNYDER HILL PUMPING PLANT
BLACK MOUNTAIN PUMPING PLANT
UPPER GILA RIVER STUDIES
U.S.A.
MEXICO
N

REGION:
Lower Colorado

PROJECT DATA SHEET

PROJECT AND STATE: CENTRAL ARIZONA PROJECT, ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH	Completion Date: 1/	% Complete 47 1/	Date 1/31/86

	BENEFIT COST RATIOS		
AUTHORIZATION: Public Law 90-537, September 30, 1968; Public Law 97-373, December 20, 1982	Based on Direct Benefits	Based on Total Benefits	Date
LAND CERTIFICATION: April 16,1973: DEFINITE PLAN REPORT: Supp. scheduled as required 2/ : To be completed as required.	1.9	2.3 3/	10/1/86

SUMMARIZED FINANCIAL DATA (See page 2 for details)

Total Federal Obligations (Reclamation) 19/	$ 3,671,200,000	Allotments to September 30, 1985		$1,459,371,260
Total Federal Obligations (Other)	---	Allotments for FY 1986	a/	170,025,000
Net Property and Other Transfers:				
Federal Participation 4/	4,328,000			
Non-Federal Participation 5/	107,393,000	Allotments to Date		$1,629,396,260
Adjustment 6/	213,557,000	Allotments Required for FY 1987		203,917,000
Total to be Allocated	$ 3,996,478,000	Balance to Complete after FY 1987		$1,837,886,740

ALLOCATIONS 7/		REPAYMENT		AMOUNTS PER ACRE			
Irrigation 8/	$ 1,364,681,000	Amount Repaid by:		Irrig. Invest/Acre	$1,369	Payment Capacity 17/	
Power	465,793,000	Irrigators 12/	$ 89,234,000	Repayment of Investment per Acre:		per acre	$69.00
M&I Water	763,741,000	Power 12/	1,012,911,000			Annual Charges:	
Recreation	155,496,000	M&I Water 12/	554,704,000	By Irrigators	90	O&M	52.00
F&WL	0	Ad Valorem 12/	451,405,000	By Power Revenues)		Construction	2.00
Flood Control	340,437,000	Other 13/	319,425,000	By M&I Water Users)	870		
Safety of Dams 9/	226,000,000	Non-Federal Con. 14/	107,393,000	)			
Non-Ind. Sys. 10/	347,976,000	Deferred/Leavitt 15/	419,813,000	Indian Irrigation	409		
Other 11/	332,354,000	Nonreimbursable 16/	1,041,593,000	(Nonreimbursable)			
Total	$ 3,996,478,000	Total	$3,996,478,000				$54.00

STATUS OF REPAYMENT CONTRACT: Repayment contract with Central Arizona Water Conservation District was executed on December 15, 1972, and validated on May 24, 1983. Construction of the Non-Indian Distribution System will be accomplished under Section 9(d), Reclamation Act of 1939. Repayment contracts will be executed with each district prior to construction of the individual systems. Ten of these repayment contracts have been executed and seven validated. Repayment contracts for the remainder of the Districts will be executed as the distribution system reports are completed.

STATUS OF NEPA COMPLIANCE: 18/ Tucson Aqueduct Phase B - Draft filed December 18, 1984 - Final filed August 14, 1985. Upper Gila River Division - Draft scheduled August 1986 - Final scheduled August 1987. Schedules for Middle Gila River Division and Indian Distribution Division NEPA Compliance will be determined as planning process progresses.

PROJECT DATA SHEET - 2
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

Analysis of Costs			Allotments		
			*LCRBDF	**Non-Indian	***Safety of Dams
Federal Obligations:					
LCRBDF 19/	$3,170,732,000	Almt to 9/30/85	$1,410,292,518	$ 49,078,742	$ ---
Non-Indian Distrib System	274,468,000	Almt for FY 1986	143,380,000	22,645,000	4,000,000
Safety of Dams	226,000,000				
Net Prop & Other Transfers:		Almts to Date	1,553,672,518	71,723,742	4,000,000
Federal Participation	4,328,000				
Non-Federal Participation	107,393,000	Almt Req FY1987	145,596,000	57,174,000	1,147,000
Adjustments	213,557,000				
Total to be Allocated	$3,996,478,000	BTC After FY1987	$1,471,463,482	$145,570,258	$220,853,000

* Represents total Federal obligations financed under authority of Section 309(a), P.L. 90-537, Colorado River Basin Project Act.

** Represents total Federal obligations financed under authority of Section 309(b), P.L. 90-537, Colorado River Basin Project Act, as amended by P.L. 97-373.

*** Represents total Federal obligations financed under authority of P.L. 95-578, Safety of Reclamation Dams Act, as amended by P.L. 98-404.

DESCRIPTION: The Central Arizona Project is located in Maricopa, Pima, Cochise, La Paz, Yavapai, and Pinal Counties of Arizona; San Bernardino County, California; Grant County, New Mexico; Clark County, Nevada; and Kane and Washington Counties, Utah. The Navajo Power Project is located in Coconino County, Arizona. The transmission lines of the project are located in Coconino, Mohave, Yavapai, and Maricopa Counties, Arizona; Kane and Washington Counties, Utah; Clark County, Nevada; and San Bernardino County, California. The project is multipurpose in scope. It will provide a supplemental water supply to 996,955 acres of partially irrigated lands and 640,000 acre-feet of water annually for municipal and industrial use (maximum municipal and industrial use in the year 2034). Benefits to fish and wildlife, recreation, and flood and sediment control will be provided. In addition, a power entitlement of 546,750 kilowatts is available to the project through terms of the Navajo Project Participation Agreement. The Non-Indian Distribution Systems are located in Maricopa, Pinal, Pima, and Yavapai Counties, Arizona; and Grant County, New Mexico.

PROJECT DATA SHEET - 3
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

OTHER INFORMATION: Funds to initiate preconstruction planning on the Central Arizona Project were appropriated in FY 1970 and other construction began in FY 1971. Funds were also appropriated in FY 1970 to cover the initial liquidation of the contract authority for the Navajo Project Participation Agreement power development features. Funds to initiate preconstruction planning on the Non-Indian Distribution Systems were appropriated in FY 1982, and construction began in FY 1984.

The final notice of allocation of project water for Indian irrigation use was published in the Federal Register on October 18, 1976. Legal proceedings were initiated by the Gila River Indian Community on January 4, 1977, opposing the Secretary's October 18, 1976, Indian Water Allocation. This suit is currently inactive. On December 1, 1980, the Secretary announced a modified allocation and raised the Indians in priority for receiving water. The modified allocation increased the amount of project water previously allocated Indian irrigation to 309,828 acre-feet and provided that during water shortage years the Indian tribes' irrigation allocation will be reduced 10 percent and any remaining shortage will be shared on a prorata basis by the Indian and municipal and industrial water users. The allocation also would allow municipal and industrial water users to substitute other water in exchange for a portion of the Indians' Central Arizona Project water allocation. Contracts with nine Indian communities and tribes have been executed. The Gila River Indian Community contract has not been signed; however, negotiations are continuing. The negotiations revolve around the issues of effluent exchanges and the reimbursability of OM&R charges. The Secretary approved the allocation of project water to Non-Indian irrigation users and municipal and industrial users on February 10, 1983.

The repayment contract with the Central Arizona Water Conservation District was validated on May 24, 1983. The water service subcontract form was approved by the Secretary in July 1983 and by the District in November 1983. Ten of 23 non-Indian irrigation allottees have signed subcontracts. This represents 71 percent of the non-Indian irrigation water. Fifty-one of the 72 municipal and industrial allottees have signed subcontracts. These subcontracts represent 71 percent of the municipal and industrial water allocation. The remaining water service subcontracts should be executed during 1986.

PROJECT DATA SHEET - 4
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

The Non-Indian Distribution System repayment contracts will be executed and validated as the distribution system plans are approved. The repayment contracts for Maricopa-Stanfield Irrigation and Drainage District, Central Arizona Irrigation and Drainage District, and New Magma Irrigation and Drainage District were executed on November 21, 1983, and validated on November 23, 1983. The Harquahala Valley Irrigation District Contract was executed January 6, 1984, and validated on April 26, 1984; Chaparral City Water Company contract was executed December 6, 1984, and validated on March 25, 1985; HoHoKam Irrigation and Drainage District was executed on April 4, 1985, and validated August 13, 1985, Tonopah Irrigation District - executed April 8, 1985, validated July 24, 1985. The repayment contracts for the following water users are scheduled as follows: Queen Creek, Chandler Heights Citrus, and San Tan Irrigation Districts - executed December 30, 1985, validation February 1986; City of Prescott - execution January 1987, validation March 1987.

As originally authorized, the Regulatory Storage Division included Orme Dam and Reservoir, to be located at the confluence of the Salt and Verde Rivers upstream of Phoenix, Arizona. The primary objective of Orme Dam was to regulate Central Arizona Project water deliveries. In 1977, during a Presidential review of water projects, Orme Dam was recommended for deletion from the project. In 1978 a study of alternatives to Orme Dam was initiated. While this study was evaluating alternatives for regulatory storage and flood control on the Salt and Verde Rivers, the Bureau was also evaluating existing dams on the Salt and Verde Rivers under the Safety of Dams Act (P.L. 95-578). The two studies were combined because both were looking at modification of existing dams. The plan (commonly known as Plan 6), which was approved by the Secretary in April 1984, included New Waddell Dam on the Agua Fria River for regulatory storage purposes and Cliff Dam on the Verde River and Modified Roosevelt Dam on the Salt River for water conservation, flood control, and safety of dams purposes.

Federal and State negotiators reached a tentative agreement on local funding for Plan 6 in early December, 1985. The proposal must now be approved by local, State, and Federal officials. The basic goal of the proposal is for the non-Federal parties to make up-front funds of approximately $329 million (October 1986 Dollars) available to the United States to expedite the construction of Plan 6 and to ensure the timely completion of all Central Arizona Project features. The entities contributing funds under the tentative agreement include: Central Arizona Water Conservation District; Flood Control District of Maricopa County; Salt River Project Agricultural Improvement and Power District and Salt River Valley Water Users' Association; and the cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe. Local funds would first become available pursuant to the proposal in August 1986.

Footnotes:

1/ Both the Central Arizona Project (Water and Power Development) and the Non-Indian Distribution Systems are included in the percent complete shown in this submission. The Central Arizona Project completion percentage includes expenditures under the obligation established for liquidation of contract authority on the Navajo Project Participation Agreement. Initial operation of Navajo Project was May 31, 1974. Initial operation of the last (third) generating unit began April 30, 1976. Initial water via the Granite Reef was delivered to the Phoenix metropolitan area in 1985 as scheduled. Initial water delivery to users of the Salt-Gila Aqueduct and to users in Pinal County is scheduled in 1986. Water deliveries to northern Pima County and the Tucson area are scheduled for 1989 and late 1992, respectively. This represents acceleration of approximately one year for delivery to Tucson from that shown in the 1986 Budget Justifications due to increased funding provided in FY 1985 through fund transfers and in FY 1986 through increased appropriations provided by the Congress. Water delivery to the central Arizona Indian communities is scheduled as follows:

Salt River Pima Maricopa Indian Community, 1988; Ak-Chin Indian Community, not later than 1988; and Chui Chu Papago Indian Community, 1990. The Chui Chu Papago system has been delayed two years from that shown in FY 1986 Budget Justifications at the request of the Indian community to await the outcome of water rights settlement legislation to be proposed. Firm water delivery dates to the remaining Indian reservations, Gila River, Fort McDowell, San Carlos-Apache, Yavapa-Prescott, San Xavier-Papago, Schuk Toak-Papago, Pascua Yaqui, Camp Verde, and Tonto Apache Indian Reservations will be determined as planning is completed.

Ultimate water delivery to the Non-Indian Distribution Systems are scheduled as follows: Harquahala Valley and Tonopah Irrigation Districts, New Magma Irrigation and Drainage District, and Chaparral City Water Company in 1986; Queen Creek, San Tan, and Chandler Heights Citrus Irrigation Districts in 1987; and HoHoKam and Maricopa-Stanfield Irrigation and Drainage Districts in 1988; City of Prescott in 1989; and Central Arizona Irrigation and Drainage District in 1990. The schedule for delivery to the remaining systems will be determined as planning is completed.

2/ A supplemental land certification for the Ak-Chin Indian Reservation was completed April 19, 1982. Supplemental land certification for the Salt River Indian Reservation was completed on December 9, 1982. Chui Chu/Papago Indian Reservation was completed March 23, 1983. Tucson Aqueduct Phase A will be certified by March 1986. The delay was caused by the additional lands to be certified. Land certifications for other Indian reservations will be scheduled as required.

3/ Increased from B/C ratios shown in the FY 1986 Budget Justifications due to increases in municipal and industrial water, recreation, and flood control benefits exceeding the increase in costs. The ratios were computed by using the authorized interest rate of 3.25 percent.

PROJECT DATA SHEET - 6
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mex[illegible]da-Utah

Footnotes: (continued)

4/ Includes $3,328,000 for Central Arizona Project and $1,000,000 for the Non-Indian Distribution Systems.

5/ Includes $685,000 advanced by the State of Arizona for advance planning work, $300,000 contributed by the State of New Mexico for drilling at Conner damsite, $72,508,000 for non-cash contributions provided by the repayment entities for the Non-Indian Distribution Systems, and $33,900,000 contributions provided on Plan 6 by local entities.

6/ Represents interest during construction which increased $158,547,000 from that shown in the FY 1986 Budget Justifications due to an increase in the interest bearing costs associated with municipal and industrial water. Includes reimbursable interest during construction of $86,996,000 for commercial power, $125,002,000 for municipal and industrial water, and $1,559,000 for recreation.

7/ Explanation of changes in allocations from FY 1986 Budget Justifications:

Allocation	FY 1986 Estimate	FY 1987 Estimate
Irrigation	$1,523,774,000	$1,364,681,000
Power	154,361,000	465,793,000
Municipal and Industrial Water	647,435,000	763,741,000
Recreation	156,742,000	155,496,000
Fish and Wildlife	60,442,000	0
Flood Control	425,254,000	340,437,000
Non-Indian Distribution Systems	343,796,000	347,976,000
Safety of Dams	235,008,000	226,000,000
Other	219,728,000	332,354,000
Total	$3,766,540,000	$3,996,478,000

PROJECT DATA SHEET - 7
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

Footnotes: (continued)

Explanation	Amount of Change
Central Arizona Project:	
Indexing	$ +74,147,000
Revised estimates on Regulatory Storage and Granite Reef, Salt-Gila, and Tucson Aqueducts	-43,122,000
Interest During Construction	+158,547,000
New Contracts	+26,686,000
Design Changes	+6,470,000
Land and Rights	+3,030,000
Non-Indian Distribution Systems:	
Non-Federal Contributions	+1,001,000
Indexing	+4,751,000
Land and Rights	+4,485,000
Minor Contracts	-3,585,000
Design Changes	-285,000
Low Bids	-2,187,000
Total	$+229,938,000

The allocations for FY 1987 have been completely revised to incorporate a number of significant changes in data and procedures from those previously used in the financial analysis of the Central Arizona Project. A summary of their impacts on the individual allocations follows:

Irrigation decreased $159,093,000 due to the assignment of less remaining joint project costs to this allocation than in the previous analysis.

Power increased $311,432,000 due to the inclusion of this function as a major project function rather than as an incidental function. Studies conducted as part of the planning process for the Regulatory Storage Division determined that commercial power would play a significant role in the project. The studies found

Footnotes: (continued)

that expanded regulatory storage would allow project pumping loads to be managed to allow most of Reclamation's Navajo Project Participation Agreement excess energy to be sold during peak summer months when energy values were greatest. Under these conditions, power benefits are the primary economic justification for the Regulatory Storage Division and the allocation methodology was changed to assign power an appropriate share of joint project costs.

Municipal and Industrial Water increased $116,306,000 due to a revised construction period for many of the project features which increased the cost associated with interest during construction thereby increasing this function.

Recreation decreased $1,246,000 due to the assignment of less remaining joint project costs to this function.

Fish and Wildlife decreased $60,442,000 due to a determination that under today's evaluation procedures there are no enhancement benefits and all costs included in the analysis were mitigating in nature rather than enhancing. This eliminates this function.

Flood Control decreased $84,817,000 due to a redefinition of separable flood control costs.

Non-Indian Distribution Systems increased $4,180,000 due to minor revisions in costs and indexing.

Safety of Dams decreased $9,008,000 due to a small change in the joint project cost included in Cliff and Modified Roosevelt Dams that is assigned to this function.

Other increased $112,626,000 primarily due to the inclusion of Charleston Dam and Reservoir in this function. This feature of the project is still included in the project cost estimate but not in the updated financial analysis since it appears unlikely that these features will be constructed as a part of the Central Arizona Project.

8/ Include $419,813,000 for costs allocated to Indian irrigation which is deferred under the Leavitt Act and $944,868,000 which is allocated to non-Indian irrigation and is reimbursable.

9/ Allocation of Safety of Dams cost to the various functions and determination of reimbursable costs have not been completed at this time. The process is scheduled for completion by July 1986.

Footnotes: (continued)

10/ Includes all costs associated with the Non-Indian Distribution Systems. These costs are not allocated as part of the Central Arizona Project allocation procedure but are assigned directly to the district constructing and repaying these facilities.

11/ Includes nonreimbursable costs of $179,044,000 for the Indian Irrigation Distribution Division, $15,465,000 for the Colorado River Division, $1,624,000 for the New Mexico Fish Hatchery associated with Hooker Dam or suitable alternative, $30,084,000 for cultural resources, $104,189,000 for Charleston Dam and Reservoir, $963,000 for contributed preauthorization investigation costs, $300,000 from the State of New Mexico, and $685,000 from the State of Arizona.

12/ The scheduled amount to be repaid is covered by existing contracts with project beneficiaries.

13/ Consists of reimbursable costs to be repaid by entities other than the Central Arizona Water Conservation District and Navajo Project layoff contractors. Upper Gila River Division, $32,248,000; recreation, $11,709,000; Non-Indian Distribution Systems $275,468,000. Seven repayment contracts have been executed and validated for the Non-Indian Distribution Systems. Three additional contracts have been executed but not validated. The remainder of the Non-Indian Distribution System contracts will be executed and validated as the distribution system reports are completed. Repayment contracts for the Upper Gila River Division and recreation will be executed as required.

14/ Amount of allocated costs which have been contributed by Arizona, $685,000; New Mexico, $300,000; the Non-Indian Distribution Systems entities, $72,508,000; and Plan 6 entities, $33,900,000.

15/ Amount for costs allocated to Indian irrigation. The Leavitt Act permits repayment to be deferred as long as the land is in Indian ownership.

16/ The nonreimbursable costs include Safety of Dams $226,000,000; Colorado River Division of $15,465,000; Indian Distribution Division, $179,044,000; New Mexico Fish Hatchery, $1,624,000; recreation, $143,787,000; flood control, $340,437,000; cultural resources $30,084,000; Charleston Dam and Reservoir $104,189,000; and contributed investigation costs, $963,000. Charleston Dam and Reservoir is included here only because it is part of the total allocated cost. It is not expected to be built as part of the Central Arizona Project. The proper allocation of fifteen percent of the Safety of Dams cost to the various functions and determination of reimbursable costs have not been completed at this time. The process is scheduled for completion by July 1986.

17/ The payment capacity per acre-foot is based on the most recent Central Arizona Project Payment Capacity Studies.

PROJECT DATA SHEET - 10
COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

Footnotes: (continued)

18/ Projectwide - Final filed September 26, 1972. Havasu Intake Channel, Havasu Pumping Plant, and Buckskin Mountains Tunnel - Final filed January 15, 1973. Granite Reef Aqueduct - Final filed January 22, 1974. Granite Reef Aqueduct portion of Transmission System - Final filed August 4, 1975. Salt-Gila Aqueduct - Final filed November 13, 1979. Allocation of Central Arizona Project water for Indian Irrigation Use - Negative Determination of Environmental Impact - June 10, 1976. Allocation of Central Arizona Project for Indian Use - Finding of no Significant Impact - October 15, 1980. Water Allocations and Water Service Contracts - Final filed March 19, 1982. Indian Distribution Division - Multiple-User Delivery Facilities - Finding of No Significant Impact - August 10, 1984. Tucson Aqueduct Phase A - Final filed July 15, 1982. Regulatory Storage Division - Final filed February 10, 1984.

19/ Appropriations authorized for Central Arizona Project by Section 309(a) of Public Law 90-537 are $3,308,988,000 (October 1986). Appropriations for Non-Indian Distribution Systems authorized by Section 309(b) of Public Laws 90-537 and 97-373 are $311,000,000 (October 1986). This authorization is adequate to cover this project as currently proposed. Appropriations for the Safety of Dams Act portions of Cliff Dam and Roosevelt Dam are authorized by Public Law 95-578 and Public Law 98-404. Total Federal obligations are estimated to be $226,000,000 (October 1986 prices) for Safety of Dams work associated with CAP. The present authorized ceiling for Safety of Dams is adequate to cover this work as presently planned.

a/ Based on the provisions of Public Law 99-177 (Gramm-Rudman), funding for this project in FY 1986 will be reduced by $6,165,240 to the water and power development portion of the project, and $973,735 to the non-Indian Distribution Systems, as of March 1, 1986. The impact of the FY 1986 reduction to the project completion, water delivery, power delivery, and/or fulfillment of other project purposes or the funding estimate to complete this project have not been adjusted in the FY 1987 Budget Justifications.

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 11

CONSTRUCTION PROGRAM

WATER DEVELOPMENT
Granite Reef Division

Granite Reef Aqueduct

Length - 177.1 miles Capacity - 3,000 cubic feet per second Bottom width - 24.0 feet Water Depth - 16.4 feet

Pumping Plants:	Capacity (cubic feet per second)	Head (feet)
Havasu	3,000	816
Bouse Hills	3,000	102
Little Harquahala	3,000	108
Hassayampa	3,000	186

Tunnels:	Length (miles)	Diameter size (feet)	Capacity (cubic feet per second)
Buckskin Mountains	6.83	22.0 (Circular-precast)	3,000
Burnt Mountain	0.55	19.5 (Horseshoe)	3,000
Agua Fria	0.73	19.5 (Horseshoe)	3,000
Siphons:			
Cunningham Wash	0.72	21	3,000
Centennial Wash	1.09	21	3,000
Jackrabbit Wash	0.31	21	3,000
Hassayampa River	0.73	21	3,000
New River	1.09	21	3,000
Agua Fria River	1.89	21	3,000
Salt River	1.62	21	3,000

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 12

Regulatory Storage Division

New Waddell Dam and Reservoir

Dam:
Type - Thin core rockfill
Structural Height - 440 feet
Crest Length - 4,900 feet
Base Width - 1,600 feet

Spillway:
Type - Ungated free overflow
Design Discharge - 328,000 cubic feet per second

Reservoir Capacity:
Total Storage - 892,000 acre-feet

Waddell Canal:
Length - 4.5 miles   Capacity - 3,000 cubic feet per second   Bottom width - 24 feet   Water depth - 16.4 feet

Pump - Generation Plant:
Pumping capacity - 3,000 cubic feet per second   Head - 183 feet
Generating Capacity - 35 Megawatts

Roosevelt Dam and Reservoir (As modified)

Dam:
Type - Masonry, thick arch
Structural Height - 330 feet
Crest Length - 1,180 feet
Base Width - 160 feet

Spillway:
Type - Submerged orifice
Design Discharge - 114,000 cubic feet per second

Reservoir Capacity
Total Storage - 2,166,000 acre-feet

Powerplant:
Generating capacity - 36 Megawatts

Cliff Dam and Reservoir

Dam:
Type - Earthfill
Structural Height - 335 feet
Crest Length - 4,100 feet
Base Width - 1,800 feet

Spillway:
Type - Ungated Ogee
Design Discharge - 149,000 cubic feet per second

Reservoir Capacity
Total Storage - 794,000 acre-feet

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 13

Salt-Gila Division

Salt-Gila Aqueduct - Reaches No. 1 through 4

Length - 59.0 miles   Capacity - 2,750 to 2,250 cubic feet per second   Bottom Width - 24.0 to 22.0 feet   Water Depth - 15.6 to 14.5 feet

Pumping Plants:	Capacity (cubic feet per second)	Head (feet)
Salt-Gila	2,750	84

Siphons:	Length (mile)	Diameter size (feet)	Capacity (cubic feet per second)
Gila River	0.6	19	2,400

Middle Gila River Division

Buttes Dam and Reservoir

Dam:
Type - Earthfill
Height - 210 feet
Crest Length - 950 feet
Base Width - 1,309 feet

Spillway:
Type - Ogee
Design Discharge - 251,000 cubic feet per second

Reservoir Capacity
Total Storage - 366,000 Structural acre-feet

Buttes Supply Canal

Length - 3.5 miles   Capacity - 1,200 cubic feet per second   Bottom width - 8.0 feet   Water depth - 7.8 feet

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 14

Upper Gila River Division

Alternative water supply plans are currently being investigated under the Upper Gila Water Supply Study.

Tucson Division

Terminal Storage

Terminal storage alternatives for Tucson Aqueduct have been deferred until operational studies show a need for this feature.

Tucson Aqueduct

Length - 77.4 miles of open canal   Capacity - 2,250 to 750 cubic feet per second   Bottom Width - 20.0 to 7.5 feet   Water Depth - 14.2 to 15.4 feet
Length - 10.0 miles of discharge line   Capacity - 750 to 200 cubic feet per second   Pipe Diameter - 132 to 72 inches
Length - 0.8 mile of siphon

Pumping Plants:	Capacity (cubic feet per second)	Head (feet)
Brady	1,200	136
Picacho	900	228
Red Rock	750	226
Twin Peaks	650	77
Sandario	575	76
Brawley	550	211
San Xavier	550	172
Snyder	350	327
Black Mountain	200	315

Transmission Facilities

287.4 miles of 230-kV line and associated switchyards and substations
109.4 miles of 115-kV line and associated switchyards and substations
6.0 miles of 69-kv line and associated switchyards

Indian Distribution Division

Facilities required to distribute water to the Central Arizona Indian communities. Physical data will be provided as planning progresses and when planning reports are approved.

Salt River Indian Reservation

Length - 6.0 miles of pipeline
Capacity - 85 to 10 cubic feet per second
Pipe Diameter - 42 to 24 inches

Ak-Chin Indian Reservation

Laterals - open
Length - 15.8 miles
Capacity - 74 to 15 cubic feet per second

Drainage System

Drains required for the service area.

Colorado River Division

National Fish Hatchery - Warm water
National Fish Hatchery - Trout
Cibola Wildlife Refuge
Rough Fish Eradication

POWER DEVELOPMENT

Navajo Project Participation Agreement

Federal entitlement to 546,750 kilowatts of power from the Navajo Generating Station located at Page, Arizona.

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 16

NON-INDIAN DISTRIBUTION SYSTEM

Harquahala Valley Irrigation District

Link Canal
Length - 3.9 miles Capacity - 400 cubic feet per second

Westside Canal
Length - 19.0 miles Capacity - 200 to 45 cubic feet per second

Harquahala Valley Road Canal
Length - 10.0 miles Capacity - 200 to 100 cubic feet per second

Buckeye-Salome Road Canal
Length - 7.7 miles Capacity - 100 to 50 cubic feet per second

Westside Laterals
Length - 35.5 miles Capacity - 100 to 5 cubic feet per second

Eastside Laterals
Length - 18.0 miles Capacity - 30 to 5 cubic feet per second

Tonopah Irrigation District 1/

Main Canal and Laterals
Length - 10.7 miles Capacity - 750 to 10 cubic feet per second

Queen Creek, Chandler Heights Citrus, and San Tan Irrigation Districts 1/

Canal and Laterals - Pipe
Length - 50 miles Capacity - 250 to 7 cubic feet per second Diameter - 78 to 12 inches

---

1/ Physical data changed to reflect construction specifications.

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 17

New Magma Irrigation and Drainage District

Lateral Systems - Open
Length - 79.3 miles   Capacity - 170 to 15 cubic feet per second

Lateral Systems - Pipelines
Length - 5.5 miles   Capacity - 69 to 15 cubic feet per second   Diameter - 48 to 18 inches

Pumping Plants
Quantity - 11   Capacity - 69 to 3 cubic feet per second   Head - 90 to 10 feet

Hohokam Irrigation and Drainage District

Hohokam Main Canal
Length - 17.8 miles   Capacity - 225 to 50 cubic feet per second

Siphons
Length - 6.2 miles   Capacity - 225 to 15 cubic feet per second   Diameter - 36 to 24 inches

Lateral Systems - Open
Length - 80 miles   Capacity - 45 to 10 cubic feet per second

Santa Rosa Canal (Serves Maricopa-Stanfield and Central Arizona Irrigation Districts and the Ak Chin and Chui Chu-Papago Indian Communities)

Length - 55.0 miles   Capacity - 1,577 to 500 cubic feet per second

Maricopa-Stanfield Irrigation and Drainage District

East Main Canal
Length - 19.7 miles   Capacity - 900 to 300 cubic feet per second

Lateral Distribution Systems
Length - 131 miles   Capacity - 200 to 15 cubic feet per second

Pumping Plants
Quantity - 23   Capacity - 15 cubic feet per second   Head 78 to 8 feet

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 18

Pipelines
Length - 0.7 miles Capacity - 15 cubic feet per second Diameter - 24 inches

Central Arizona Irrigation and Drainage District

Central Main Canal
Length - 28 miles Capacity - 900 to 50 cubic feet per second

South Main Canal
Length - 14 miles Capacity - 500 to 50 cubic feet per second

Lateral Distribution Systems
Open Laterals
Length - 133 miles Capacity - 300 to 15 cubic feet per second
Pipelines
Length - 7.0 miles Capacity - 45 to 15 cubic feet per second Diameter - 39 to 24 inches
Pumping Plants
Quantity - 8 Capacity - 45 to 15 cubic feet per second Head - 45 to 8 feet

San Carlos Irrigation and Drainage District

Rehabilitation Work

Florence Canal
Length - 16.0 miles Capacity - 90 to 13 cubic feet per second

Casa Grande Canal
Length - 22.0 miles Capacity - 400 to 25 cubic feet per second

Laterals
Length - 141.0 miles Capacity - 90 to 15 cubic feet per second

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 19

New Canal Work

Florence-Casa Grande Canal to Casa Grande Canal Link
Length - 1.7 miles   Capacity - 400 cubic feet per second

Chaparral City Water Company

Pipeline
Length - 4.5 miles   Capacity - 20 cubic feet per second   Diameter - 24 inches

Pumping Plant
Quantity - 1   Capacity - 20 cubic feet per second   Head - 440 feet

Raw Water Reservoir   Capacity - 3.5 million gallons

City of Prescott
Pipeline
Length - 11.6 miles   Capacity - 12 cubic feet per second   Diameter - 30 inches

Pumping plants
Quantity - 2   Capacity - 12 cubic feet per second   Head - 216 and 40 feet

Physical data for other districts will be included as planning reports are approved. The physical data for Non-Indian Distribution Systems will continue to change as plans are approved and specifications prepared.

LAND AND RIGHTS - WATER DEVELOPMENT

Quantity - 76,500 acres
Total Estimated Cost - $84,398,000
Cost Per Acre - $1,103
Acquisition - 39 percent complete as of September 30, 1985

COLORADO RIVER BASIN PROJECT
Central Arizona Project, Arizona-California-New Mexico-Nevada-Utah

PHYSICAL DATA ON STRUCTURES - 20

LAND AND RIGHTS - NON-INDIAN DISTRIBUTION SYSTEMS 1/

Quantity - 7,945 acres
Total Estimated Cost - $12,541,000
Cost Per Acre - $1,578
Acquisition 23 percent complete as of September 30, 1985

RELOCATIONS - WATER DEVELOPMENT

Total Estimated Cost - $169,000,000
Percent Complete - 26 percent as of September 30, 1985

Items:	Total Cost	Cost to September 30, 1985
Arizona State Highway No. 88 (including bridge) - Roosevelt Dam	$ 15,493,000	$ -
Apache Trail - Roosevelt Dam	1,652,000	-
Powerhouse Service Road - Roosevelt Dam	1,283,000	-
Salt River Project Power Lines - Roosevelt Dam	578,000	-
Recreation Facilities - Roosevelt Dam	1,735,000	-
Access Roads - Cliff Dam	4,184,000	-
Recreation Facilities - Cliff Dam	2,345,000	-
Castle Hot Springs Road - New Waddell Dam	10,049,000	216,200
Recreation Facilities - New Waddell Dam	5,357,000	-
Southern Pacific Railroad - Charleston Dam and Reservoir	27,249,000	-
Southern Pacific Railroad - Buttes Dam and Reservoir	40,648,000	-
Arizona State Highway No. 90	5,058,000	-
Various electric, telephone, and other utilities	4,250,000	3,200,000
Various farm and county roads and bridges	33,450,000	31,530,917
Various State and Federal highways	12,780,000	7,654,000
Various railroad crossings	2,889,000	1,605,000
TOTAL	$169,000,000	$44,206,117

1/ Land and Rights acres and costs are now shown since Reclamation will purchase these rights instead of the Districts.

Appropriation Title: Construction Program
Colorado River Basin Project
Lower Colorado River Basin Development Fund

CENTRAL ARIZONA PROJECT, ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH - 21

FISCAL YEAR 1987

Work Proposed	Program
WATER DEVELOPMENT	
Granite Reef Division - Studies, construction and monitoring for fish and wildlife mitigation facilities will be completed. Recreation grants to counties and cities will continue.	$ 1,080,000
Regulatory Storage Division - Work will begin on the County Center relocation, Stage I - pumps and motors, completion of the canal, pumping-generating structure/canal siphon for New Waddell Dam, and the Westwing Substation modifications for New Waddell Dam; and exploratory tunnels and pullout tests, Highway 188 Bridge, Highway 88 relocation on Modified Roosevelt Dam. Work will be completed on Castle Hot Springs Road relocation and Waddell Dam cutoff wall. Work will continue on the first portion of Waddell Canal. Preconstruction activities will continue on New Waddell Dam, Modified Roosevelt Dam, and Cliff Dam.	49,065,000
Salt-Gila Division - Construction of fish and wildlife mitigation features will be completed.	210,000
Middle Gila River Division - Preconstruction activities will continue.	10,000
Upper Gila River Division - Preconstruction activities and related environmental studies will continue.	822,000
Tucson Division - Contracts will be awarded for Brawley and San Xavier Pumping Plants, Canal Reach 5, pipeline and the control cables for Reaches 1 through 3. Construction will continue on pumps and motors and the completion contracts for Brady, Picacho, and Red Rock Pumping Plants, Twin Peaks and Sandario Pumping Plants, and Canal Reach 4. Construction on Brady and Red Rock Pumping Plant structures, Reach 1 (station 402 to 661), 2, and 3 will be completed. Preconstruction activities will continue.	72,798,000
Transmission Facilities - Construction will begin on Tucson Phase B 115-kV Rattlesnake Tap to San Xavier Pumping Plant.	2,282,000

Appropriation Title: Construction Program
Colorado River Basin Project
Lower Colorado River Basin Development Fund

CENTRAL ARIZONA PROJECT, ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH - 22

FISCAL YEAR 1987

Work Proposed (continued)	Program
WATER DEVELOPMENT - (continued)	
Indian Distribution Division. - Contracts will continue on Santa Rosa Canal Division B, and Ak-Chin On-Reservation distribution system. Construction will be completed on the Santa Rosa Canal Division A. Preconstruction studies will continue.	13,664,000
Drainage System. - For preconstruction activities on this item.	10,000
Colorado River Division. - For preconstruction activities on this item.	50,000
Permanent Operating Facilities. - Contracts for furnishing and installing the supervisory control system and the maintenance and warehouse facility will be completed.	7,537,000
Service Facilities, Depreciation, and Salvage. - Provides for purchase of work and office equipment and specialized heavy duty field equipment, which is partially offset by depreciation charged to project features on a use basis.	3,412,000
Other Project Costs. - Work on water service subcontracts and water allocations will be continued.	700,000
SUBTOTAL - WATER DEVELOPMENT	$ 151,640,000

Appropriation Title: Construction Program
Colorado River Basin Project
Lower Colorado River Basin Development Fund

CENTRAL ARIZONA PROJECT, ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH - 23

FISCAL YEAR 1987

Work Proposed (continued)	Program
POWER DEVELOPMENT	
Navajo Project Participation Agreement. - Provides the Government's share of the capital additions and betterment program for the Navajo Generating Station and associated transmission system.	1,956,000
Non-Federal Participation.	-8,000,000
TOTAL-LOWER COLORADO RIVER BASIN FUND	$145,596,000
NON-INDIAN DISTRIBUTION SYSTEMS	
Non-Indian Distribution Systems. - Contracts will be awarded on Phase II Pipelines, Queen Creek Irrigation District; O&M facilities and equipment, Blocks 1 and 2 Laterals, and pumping plants and pipeline for New Magma Irrigation and Drainage District; West Distribution System Units 2 and 3, supervisory control system, East Main Canal, East Distribution System Units 1 and 2 for the Maricopa-Stanfield Irrigation and Drainage District; Central Main Canal, supervisory control system, Central Distribution System Units 1 and 4 for Central Arizona Irrigation and Drainage District. Construction will continue on the farm turnout meters for Maricopa-Stanfield and Central Arizona Irrigation and Drainage District and the Santa Rosa Canal Division B. Construction will be completed on Phase I Pipelines for Queen Creek Irrigation and Drainage District; the pumping plant, Lateral System C, farm turnout meters, and supervisory control system for New Magma Irrigation and Drainage District; Main Canal for HoHoKam Irrigation and Drainage District; West Distribution System Unit 1 for Maricopa-Stanfield Irrigation and Drainage District; North Distribution System for Central Arizona Irrigation and Drainage District; and the Santa Rosa Canal Division A. Preconstruction activities on other distribution systems will continue.	$70,885,000
Non-Federal Participation.	-13,711,000
TOTAL-NON-INDIAN DISTRIBUTION SYSTEMS	$57,174,000

Appropriation Title: Construction Program
Colorado River Basin Project
Lower Colorado River Basin Development Fund

CENTRAL ARIZONA PROJECT, ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH - 24

FISCAL YEAR 1987

Work Proposed (continued)	Program
SAFETY OF DAMS DIVISION	
Safety of Dams Division. - Preconstruction activities will continue on Modified Roosevelt Dam.	1,147,000
TOTAL SAFETY OF DAMS DIVISION	1,147,000
TOTAL	$203,917,000

COLORADO RIVER BASIN PROJECT, CENTRAL ARIZONA PROJECT - ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Water Development					
Granite Reef Division	748,673,000	730,013,276	17,345,702	1,080,000	234,022
Regulatory Storage Division	888,032,000	39,259,116	22,440,288	49,065,000	777,267,596
Salt-Gila Division	199,114,000	187,843,014	10,969,986	210,000	91,000
Middle Gila River Division	142,431,000	3,229,050	14,879	10,000	139,177,071
Upper Gila River Division	83,624,000	5,423,529	739,071	822,000	76,639,400
Tucson Division	562,239,000	79,207,660	90,218,082	72,798,000	320,015,258
Transmission Facilities	82,125,000	65,789,382	7,769,618	2,282,000	6,284,000
Indian Distribution Division	179,044,000	6,275,913	20,542,708	13,664,000	138,561,379
Drainage System	33,545,000	432,612	150,000	10,000	32,952,388
Colorado River Division	15,465,000	900,277	10,000	50,000	14,504,723
Permanent Operating Facilities	40,703,000	22,401,679	10,438,228	7,537,000	326,093
Service Facilities, Depreciation, and Salvage	---	12,362,759	7,573,239	3,412,000	(23,347,998)
Other Project Costs	3,350,000	1,834,652	609,348	700,000	206,000
Noncontract Costs	(636,168,000)	(259,417,480)	(46,039,000)	(37,640,000)	(293,071,520)
Relocation Costs	(169,000,000)	(44,206,117)	(6,000,000)	(6,000,000)	(112,793,883)
Total Construction Costs - Water Development	2,978,345,000	1,154,972,919	188,821,149	151,640,000	1,482,910,932
Power Development					
Navajo Project Participation Agreemnt .	230,600,000	221,789,144	830,926	1,956,000	6,023,930
Total Construction Costs - Power Development	230,600,000	221,789,144	830,926	1,956,000	6,023,930

COLORADO RIVER BASIN PROJECT, CENTRAL ARIZONA PROJECT - ARIZONA-CALIFORNIA-NEW MEXICO-NEVADA-UTAH

PF-40 SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 PROGRAM	BALANCE TO COMPLETE
Construction Program					
Non-Indian Distribution Systems	347,976,000	43,089,806	83,117,836	70,885,000	150,883,358
Noncontract Costs	(80,021,000)	(21,120,232)	(15,329,000)	(14,853,000)	(28,718,768)
Safety of Dams Division 1/	226,000,000		4,000,000	1,147,000	220,853,000
Total Program Costs - Central Arizona Project	3,782,921,000	1,419,851,869	276,769,911	225,628,000	1,860,671,220
Non-Federal Cash Contributions	(34,885,000)	(985,000)		(8,000,000)	(25,900,000)
Non-Federal Non-Cash Contributions . . .	(72,508,000)	(19,151,000)	(12,906,000)	(13,711,000)	(26,740,000)
Consolidated Expenditures and Credits . .	(4,328,000)	(10,208,520)			5,880,520
Total Expenditures	3,671,200,000	1,389,507,349	263,863,911	203,917,000	1,813,911,740
Undelivered Orders		38,425,411	(38,425,411)		
Total Obligations	3,671,200,000	1,427,932,760	225,438,500	203,917,000	1,813,911,740
Method of Financing					
Appropriations available and required . .	$ ---	$ ---	$170,025,000	$203,917,000	1,813,911,740
Prior year funds available	---	---	31,438,500	---	---
Underfinancing	---	---	23,975,000	---	---
Non-Federal Cash	[34,885,000]	[985,000]	---	[8,000,000]	[25,900,000]
Non-Federal Non-Cash	[72,508,000]	[19,151,000]	[12,906,000]	[13,711,000]	[26,740,000]

1/ Because of work on these project features serve more than a single function, there is no feasible way to allocate costs specifically for dam safety and non-dam safety contract work items. Consequently, funding is requested as a part of the CAP Safety of Dams Division although the costs of these features accrue against the SOD ceiling and not CAP.

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Construction Program

Bureau of Reclamation

	Estimated 1986	Estimated 1987	Increase or decrease (-)
Program and Financing:			
Total direct obligations	$ 622,527	$ 576,939	$ -45,588
Unobligated balance available, start of year	-101,007	-180	100,827
Unobligated balance available, end of year	180	---	-180
Appropriation:	$ 521,700	$ 576,759	$ 55,059
Budget Authority:			
Appropriation: Reclamation Fund, Special Fund	$ 272,195	$ 300,301	$ 28,106
General Fund	249,505	276,458	26,953
Total Budget Authority (appropriation)	$ 521,700	$ 576,759	$ 55,059
Reduction pursuant to P.L. 99-177 (Gramm-Rudman)	-22,433	---	22,433
Object Classification:			
11.0 Personnel compensation	$ 58,388	$ 60,944	$ 2,556
12.1 Personnel benefits: Civilian	13,196	13,733	537
13.0 Benefits for former personnel	114	127	13
21.0 Travel and transportation of persons	4,047	3,800	-247
22.0 Transportation of things	1,883	2,045	162
23.1 Standard level user charges	5,177	6,000	823
23.2 Rental payments to others	735	744	9
23.3 Communications, utilities, and miscellaneous charges	1,858	1,985	127
24.0 Printing and reproduction	1,479	1,672	193
25.0 Other services	253,471	163,199	-90,272
26.0 Supplies and materials	4,584	5,102	518
31.0 Equipment	9,720	10,905	1,185
32.0 Lands and structures	260,668	294,976	34,308
33.0 Investments and loans	2,000	3,000	1,000
41.0 Grants, subsidies, and contributions	5,000	8,500	3,500
43.0 Interest and dividends	207	207	---
99.0 Total direct obligations	$622,527	$576,939	$ -45,588

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Colorado River Basin Project
Lower Colorado River Basin Development Fund

Bureau of Reclamation

		Estimated 1986	Estimated 1987	Increase or decrease (-)
Object Classification:				
11.0	Personnel compensation.	$25,299	$23,900	$-1,399
12.1	Personnel benefits: Civilian	4,108	3,883	-225
13.0	Benefits for former personnel	43	49	6
21.0	Travel and transportation of persons.	1,469	1,400	-69
22.0	Transportation of things	505	905	400
23.1	Standard level user charges	629	461	-168
23.2	Communications, utilities, and other rent	1,314	1,360	46
24.0	Printing and reproduction	280	260	-20
25.0	Other services.	94,453	91,879	-2,574
26.0	Supplies and materials.	5,909	6,276	367
31.0	Equipment	2,320	2,795	475
32.0	Land and Structures	107,275	96,896	-10,379
43.0	Interest and dividends	2,504	3,522	1,018
99.0	Total direct obligations.	$246,108	$233,586	$-12,522

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Colorado River Storage Project
Upper Colorado River Basin Fund

Bureau of Reclamation

		Estimated 1986	Estimated 1987	Increase or decrease (-)
Object Classification:				
11.0	Personnel compensation.	$30,112	$28,903	$-1,209
12.1	Personnel benefits: Civilian	4,411	4,264	-147
13.0	Benefits for former personnel	25	---	-25
21.0	Travel and transportation of persons.	1,606	1,525	-81
22.0	Transportation of things	1,200	1,335	135
23.1	Standard level user charges	994	936	-58
23.2	Communications, utilities, and other rent	1,346	1,414	68
24.0	Printing and reproduction	131	140	9
25.0	Other services.	8,282	8,342	60
26.0	Supplies and materials.	4,910	5,068	158
31.0	Equipment	2,000	2,455	455
32.0	Land and Structures	49,853	74,711	24,858
43.0	Interest and dividends	7,494	7,490	-4
99.0	Total direct obligations.	$112,364	$136,583	$ 24,219

CONSTRUCTION PROGRAM

Explanation of differences between obligations in U.S. Budget
(Itemization of Estimate) and Budget Justifications
(In Thousands of Dollars)

Items of reconciliation	Obligations	
	1986	1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$622,527	$576,939
Unobligated balance to FY 1987	180	-180
Adjustment in prior year funds	-1,346	---
Non-Federal advances not included in the Construction Program of the U.S. Budget:		
Animas La Plata	---	4,235
Bonneville Unit	5,000	---
Central Arizona Project	---	8,000
North Loup - PSMBP	---	55
WEB Rural Water Development Project	800	800
San Luis Unit, CVP	641	578
Bufflo Bill Dam Modification	5,180	10,466
Safety of Dams	100	90
Reduction for Public Law 99-177	-22,433	---
Budget Justifications.	$610,649	$600,983

COLORADO RIVER BASIN PROJECT
LOWER COLORADO RIVER BASIN DEVELOPMENT FUND
Explanation of differences between obligations in U.S. Budget (Itemization of Estimate) and Budget Justifications
(In Thousands of Dollars)

Items of reconciliation	Obligations	
	1986	1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$246,108	$233,586
Revenue	-100,290	-100,665
Capital Transfer to General fund	13,304	12,675
Unobligated balance, start of year	-18,036	-17,994
Unobligated balance, end of year	17,994	17,994
Prior year funds applied	-15,700	
Budget Justifications, Central Arizona Project (Transfer from Construction Program)	$143,380	145,596

COLORADO RIVER STORAGE PROJECT

UPPER COLORADO RIVER BASIN FUND

Explanation of differences between obligations in U.S. Budget (Itemization of Estimate) and Budget Justifications (In Thousands of Dollars)

Items of reconciliation	Obligations	
	1986	1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$112,364	$136,583
Revenue	-28,605	-27,490
Capital Transfer to General fund	1,805	1,836
Unobligated balance, start of year	-10,452	-1,950
Unobligated balance, end of year	1,950	1,950
Budget Justifications (Transfer from Construction Program) .	77,062	110,929

OPERATION AND MAINTENANCE

INDEX

	Page Number
Summarized Financial Data and General Statement	484
Table of appropriations, applied revenues, and non-Federal fund advances	491
Table of obligations by function	497
Explanation of changes in appropriation requirements by project	508
Explanation of changes in revenue program requirements by project	528

Projects in the budget are as follows:	State	
Boise Area Projects	Idaho-Oregon	514
Boulder Canyon Project	Arizona-California-Nevada	510
Brantley Project	New Mexico	516
Cachuma Project	California	510
Carlsbad Project	New Mexico	516
Central Valley Project	California	511
Collbran Project	Colorado	512
Colorado-Big Thompson Project	Colorado	513
Colorado River Basin Project	Arizona-Nevada	528
Colorado River Storage Project		
Central Utah Participating-Bonneville Unit	Utah	529
Central Utah Participating-Jensen Unit	Utah	529
Consumptive Use Studies	Various	531
Emergency Funds	Various	531
Examination of Existing Structures	Various	531
Initial Units	Various	530
Land Resources Management	Various	531
Miscellaneous Flood Control	Colorado-Utah	528
Quality of Water Studies	Various	532
San Juan-Chama Participating	New Mexico-Colorado	529
Seedskadee Participating	Wyoming	530
Columbia Basin Project	Washington	519
Conejos Division	Colorado	513
Crooked River Project	Oregon	518
Examination of Existing Structures	Various	523
Fryingpan-Arkansas Project	Colorado	513
Gramm-Rudman Impact		507
Grand Valley Unit, CRBSCP	Colorado	513

OPERATION AND MAINTENANCE

INDEX

Project or Activity	State	Page Number
Hungry Horse Project	Montana	515
Itemization of Estimate	Various	533
Klamath Project	California-Oregon	512
Land Resources Management	Various	524
Mancos Project	Colorado	513
McGee Creek	Oklahoma	518
Middle Rio Grande Project	New Mexico	517
Milk River Project	Montana	516
Minidoka Area Projects	Idaho-Wyoming	515
Miscellaneous Flood Control Operations	Various	523
Navajo Unit	Colorado-New Mexico	529
Negotiation and Administration of Water Marketing Contracts	Various	523
Orland Project	California	511
Parker-Davis Project	Arizona-California-Nevada	509
Pecos River Basin Water Salvage Project	New Mexico-Texas	517
Permanent Appropriation (CRDF)	Arizona-California-Nevada	527
Pick-Sloan Missouri Basin Program:		
Kansas River Area	Kansas-Nebraska-Colorado	520
North Platte Area	Wyoming	521
Upper Missouri Area	Montana-South Dakota-Wyoming	521
Provo River Project	Utah	519
Reclamation Reform Program	Various	523
Rio Grande Project	New Mexico	517
Rogue River Basin Project, Talent Division	Oregon	518

OPERATION AND MAINTENANCE

INDEX

Project or Activity	State	Page Number
San Luis Valley Project	Colorado	514
Soil and Moisture Conservation Program	Various	525
Solano Project	California	512
Tualatin Project	Oregon	519
Umatilla Project	Oregon	519
Washita Basin	Oklahoma	518
Washoe Project	Nevada-California	516
Water Management and Conservation	Various	523
Yakima Project	Washington	520
Yuma Area Consolidated	Arizona-California-Nevada	510

OPERATION AND MAINTENANCE

General Statement

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$132,665,000	
Applied Operating Revenues	102,680,000	
Permanent Appropriation 1/	18,850,000	
Funds Advanced by Water Users	7,015,191	
Funds Advanced by States, Municipalities, and Other Non-Federal Agencies	1,274,000	
Application of Prior Year Funds	31,112,704	
Reduction for Public Law 99-177 (Gramm-Rudman)	-6,516,000	
Total Obligations, FY 1986		$287,080,895
Fiscal Year 1987:		
Estimate of Appropriation	$150,000,000	
Applied Operating Revenues	107,054,000	
Permanent Appropriation 1/	48,600,000	
Funds Advanced by Water Users	8,440,000	
Funds Advanced by States, Municipalities, and Other Non-Federal Agencies	1,216,000	
Total Obligations, FY 1987		$315,310,000

---

[1] Operation and maintenance of the Boulder Canyon Project is funded by revenues deposited in the Colorado River Dam Fund. Public Law 98-381 authorizes that these revenues be made available without further Congressional appropriation.

O&M SUMMARY

Purpose

The primary purpose of the Operation and Maintenance (O&M) Program is to operate and maintain, on a continuing basis, the power facilities and reserve waterworks on Reclamation's multipurpose projects, and to administer the associated land and water management activities.

The two major components of the Operation and Maintenance Program are the O&M of Facilities and the Associated O&M Programs. It is through the activities of the O&M of Facilities that we assure operational readiness of irrigation, municipal, and industrial water and power facilities on Reclamation constructed projects; protect the operational and structural integrity of the multi-billion dollar investment in Reclamation facilities, and assure repayment of reimbursable project costs. The Associated O&M Programs are designed to assure that the water and power facilities serve their intended purposes safely, productively, and economically. In carrying out the functions of these associated programs, we are able to conserve and utilize the Federal land, water, and power resources in the most advantageous manner.

Funding

Congress appropriated $132,665,000 for the Operation and Maintenance in FY 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce its Operation and Maintenance allotments by $5,705,000. In addition, the Colorado River Dam Fund permanent appropriation within the O&M program has also reduced $811,000. A tabulation showing the financial impact as it applies to each project is shown on page 507.

Of the $150,000,000 requested for fiscal year 1987, $136,641,000 will be used to carry out the essential activities that assure reliable operation and maintenance of the water and power facilities on 34 Reclamation constructed projects; and $13,359,000 to administer seven associated O&M programs.

The O&M program funding comes from annual appropriations, a permanent appropriation, operating revenues, and advances by water users, States, and municipalities. The overall increase includes an increase of $17,335,000 in the annually appropriated funds.

Program Thrusts

Our major program thrusts in fiscal year 1987 are uprating powerplant facilities and overhauling generators to increase productivity; and doing the critically needed repairs, replacements, and rehabilitation to assure the operational and structural integrity of facilities. Additionally, provisions of Section 203(b) of the Reclamation Reform Act of 1982 must be implemented by April 12, 1987.

The requested $150,000,000 will allow us to uprate facilities at four powerplants; do repairs and improvements to specific canals and dams, including the placement of air slots in the Hoover Dam spillways; and replace or rehabilitate designated warehouses and associated equipment. Our projected workload also includes such items as additional rehabilitation of a low-flow conveyance channel; installation of ozone abatement equipment; replacement of aged, unreliable vehicles and other movable property and equipment essential to the accomplishment of O&M mandated functions. We will do the planned analyses and seismotectonic studies required to evaluate the safety of existing dams; erosion control and flood control work; conduct land use inventories; and perform additional compliance checks associated with the Reclamation Reform Program.

Another particularly important work item is to carry on our program to replace needle valves at 20 Reclamation dams. All Bureau needle valves will be investigated and replaced by jet-flow gates by FY 1991. In FY 1987, 60-inch jet-flow gates will be installed at Echo, Pathfinder, Tieton, and Seminoe Dams. Design and installation specification work, plus field investigations, will also take place in FY 1987 for Sumner, Boca, and McKay Dams.

In addition to the uprating of power facilities with appropriated funding, we will also uprate facilities at Blue Mesa, Flaming Gorge, Glen Canyon and Hoover powerplants with applied revenues.

New Project

Brantley will be a new project during fiscal year 1987, and it will require $130,000 in O&M funds. This project will be operated and maintained for the purposes of irrigation, flood control, and fish, wildlife, and recreation enhancement, as mandated by authorizing legislation, Public Law 92-514.

In FY 1987, the Bureau will begin to repay O&M costs of the salinity control portions of the Grand Valley Unit, CRBSCP.

New Facilities

A new facility scheduled to come into service for the first time, during fiscal year 1987, is an additional stage of water salvage wells in the Closed Basin Division, San Luis Valley Project ($391,000). The purpose of operating these wells is to salvage water that is presently being lost within the Closed Basin Division and deliver it into the Rio Grande for downstream beneficial uses.

A facility that is to be reactivated during fiscal year 1987 is the Pilot Butte Powerplant ($300,000). The cost of energy produced by the Pilot Butte Powerplant would be less than the cost of energy produced by the existing fossil fuel plants in the area.

In fiscal year 1987, these two facilities will require $691,000 in O&M funds.

Revenue-Financed Programs

Operation, maintenance, and replacement programs on four initial units and four participating projects of the Colorado River Storage Project and the Colorado River Basin Project are funded from revenue collections, and do not require the direct appropriation of funds. The initial units and participating projects are located in the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. Section 5(c) of the Colorado River Storage Project Act provides that all revenues collected in connection with the operation of the project and participating projects shall be credited to the Upper Colorado River Basin Fund and shall be available without further appropriation for defraying the costs of operation, maintenance, replacements, and emergency expenditures for facilities of the project and participating projects. With respect to each participating project, cost of operation, maintenance, and replacement shall be paid from revenues received from such project. Costs allocated to flood control, recreation, and fish and wildlife facilities are nonreimbursable as provided in the Project Act. Section 403 of the Colorado River Basin Project Act also provides that all revenues from operation of the project shall be credited to the Lower Colorado River Basin Development Fund and be available without further appropriation to defray the costs of operation, maintenance, replacements, and emergency expenditures for facilities of the projects. Section 104(a) of the Hoover Power plant Act of 1984 provides that all revenues from the operation of the Boulder Canyon Project shall be credited to the Colorado River Dam Fund and shall be available without further appropriation to defray the costs of operation, maintenance replacements, and emergency expenditures for facilities of the project. In addition to funds provided through a permanent appropriation, the Boulder Canyon Project will require readvancement of $3 million from the Federal treasury for installation of airslots on the Hoover Dam Spillways. Costs will be repaid over a 50-year period with interest.

There is a decrease of $1,712,000 in the funding requirement, in fiscal year 1987, from operating revenues in the Upper Colorado River Basin Fund. This decrease is due primarily to the major portion of the generator uprating at Glen Canyon being completed in fiscal year 1986. The $29,750,000 increase in the funding requirement from operating revenues in the Colorado River Dam Fund, in fiscal year 1987, includes the uprating of the powerplant in the Boulder Canyon Project.

Nonreimbursable Programs

Several O&M functions are nonreimbursable as a matter of policy or law. Those nonreimbursable functions are: the administration of the Reclamation Reform Act of 1982; the Water Management and Conservation Program; the Examination of Existing Structures Program; the Soil and Moisture Conservation Program; the Land Resources Management Program; flood control activities (including operation of levee systems); salinity control; operations under treaties with Mexico; and most recreation, fish, and wildlife activities.

Reclamation-Operated Facilities

As a permanent activity, Reclamation operates and maintains power features and reserve works on multipurpose projects. The responsibility for operating and maintaining most single-purpose project facilities, such as irrigation facilities, is turned over to non-Federal organizations as rapidly as possible. Until the user organizations assume this responsibility, Reclamation uses appropriated funds, non-Federal advances, or project revenues to operate and maintain the single-purpose projects. In fiscal year 1987, Reclamation will operate and maintain facilities with a total electric generating capacity of 14,012,073 kilowatts in 54 powerplants, and approximately 300 circuit miles of high-voltage transmission lines. Reclamation will also continue to operate some irrigation-distribution systems on a cost-sharing basis with water users.

Uprating of Powerplants

The uprating of power facilities, during fiscal year 1987, will include those at Keswick and Shasta Powerplants, Central Valley Project; and Fremont and Alcova Powerplants, North Platte Area, Pick-Sloan Missouri Basin Program. This work will be funded from the annual appropriation.

The uprating of powerplant facilities, funded by applied revenues or a permanent appropriation, will be continued on the Blue Mesa and Flaming Gorge Units of the Colorado River Storage Project, and also on the Boulder Canyon Project. The uprating of the powerplant facilities on the Glen Canyon Unit of the Colorado River Storage Project will be completed in fiscal year 1987.

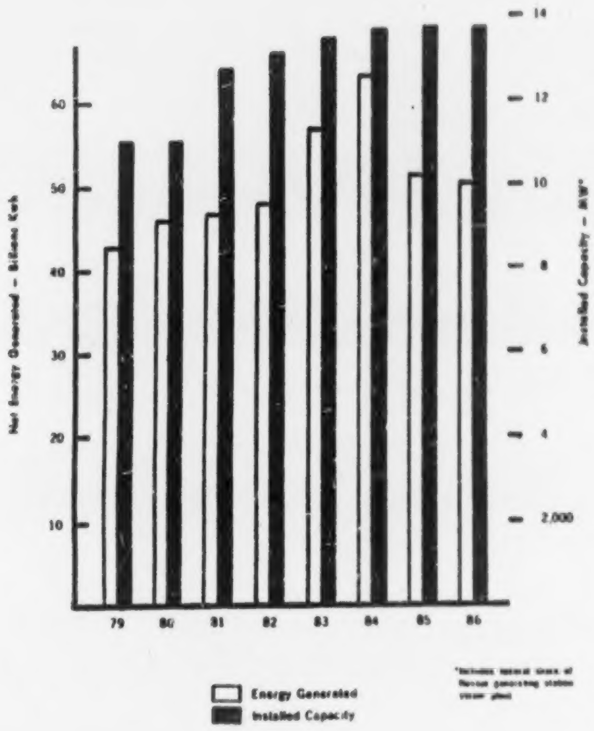
Upon completion of the ongoing programs in fiscal year 1987, the total power capacity will be increased by 128,500 kilowatts.

Impact of Reclamation's O&M Program

Reclamation constructed facilities are largely responsible for the following annual benefits: a gross crop production value of $7.3 billion; total water delivery of 29.6 million acre-feet benefitting 23.3 million people (25.7 million acre-feet of irrigation water; 2.7 million acre-feet of municipal and industrial water, and 1.2 million acre-feet of other non-agricultural water); irrigation service to 9.8 million acres of land; 62.7 billion kilowatt hours of electric power; 50.4 million 12-hour visitor days at 291 recreation areas; and $242 million in flood control benefits.

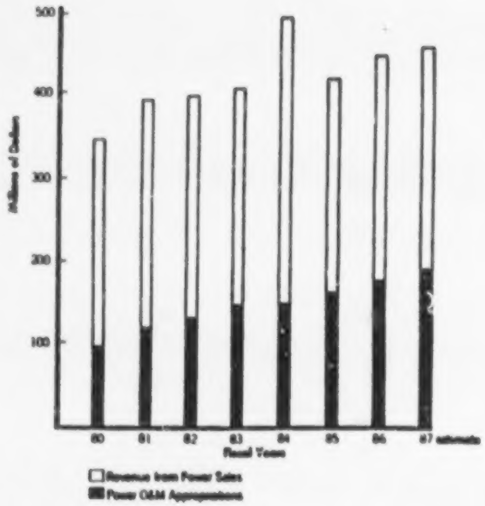
In fiscal year 1987, the installed electric generating capacity of 14,012,073 kilowatts will provide electrical energy for nearly 16 million people. This clean, renewable source of energy decreases our dependence on fossil fuels -- both domestic and imported.

Net Energy Generation and Installed Capacity
FY 79 – FY 86

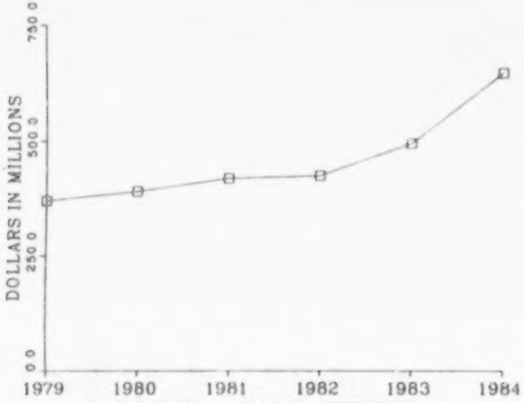


*Includes federal share of Navajo generating station steam plant

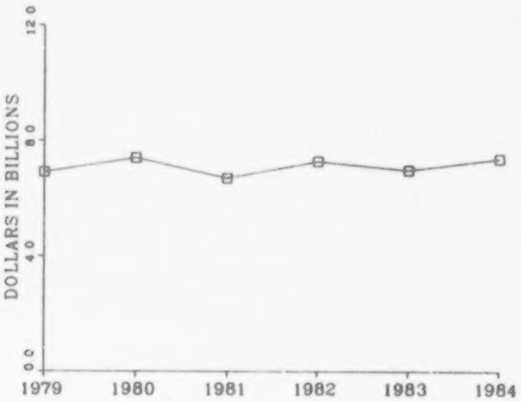
Annual Power Revenues vs
Annual Appropriation for Power O&M
FY 80 - FY 87



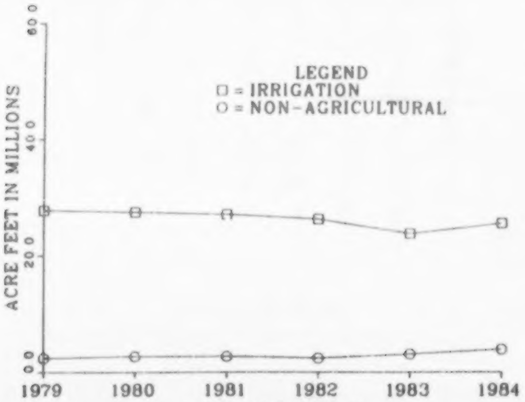
IMPACT OF OPERATION & MAINTENANCE PROGRAM



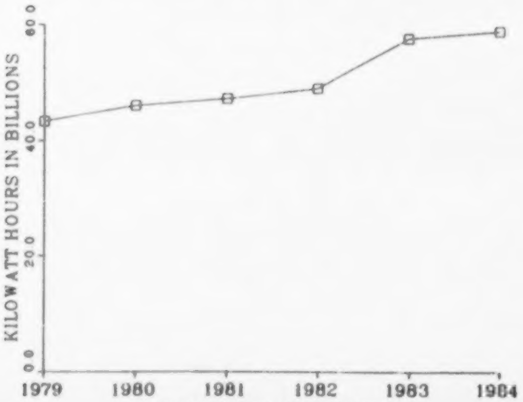
GROSS INCOME FROM OPERATIONS



GROSS CROP PRODUCTION



WATER DELIVERIES



ELECTRICITY GENERATED

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES

(In Thousands of Dollars)

PROJECT AND STATE	FISCAL YEAR 1986				FISCAL YEAR 1987			
	ALLOCATION OF APPROPRIATION	PRIOR YEAR FUNDS	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	ALLOCATION OF APPROPRIATION	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	FY 1987 CHANGE FROM FY 1986
APPROPRIATED O&M ACTIVITIES:								
Appropriated O&M Projects:								
Arizona-California-Nevada								
Boulder Canyon	6,500	0	0	6,500	3,000	0	3,000	(3,500)
Parker-Davis	2,484	453	785	3,722	2,642	876	3,518	(204)
Yuma Area Projects	4,070	6,500	0	10,570	14,860	0	14,860	4,290
California								
Cachuma	178	0	0	178	158	0	158	(20)
Central Valley	37,687	109	0	37,796	45,856	0	45,856	8,060
Orland	165	0	0	165	165	0	165	0
Solano	1,609	0	0	1,609	1,609	0	1,609	0
California-Oregon								
Klamath	634	0	135	769	574	135	709	(60)
Colorado								
Collbran	800	79	0	879	662	0	662	(217)
Colorado-Big Thompson	5,761	138	1,236	7,135	6,806	1,209	8,015	880
Fryingpan-Arkansas	1,777	53	0	1,830	1,824	0	1,824	(6)
Grand Valley, CRBSCP	0	0	0	0	50	0	50	0
Mancos	61	12	0	73	40	0	40	(33)
San Luis Valley	438	5	0	443	954	0	954	511
Idaho-Oregon								
Boise Area Projects	1,918	0	310	2,228	1,973	319	2,292	64

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES

(In Thousands of Dollars)

PROJECT AND STATE	FISCAL YEAR 1986				FISCAL YEAR 1987			
	ALLOCATION OF APPROPRIATION	PRIOR YEAR FUNDS	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	ALLOCATION OF APPROPRIATION	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	FY 1987 CHANGE FROM FY 1986
Idaho-Wyoming								
Minidoka Area Projects	3,267	0	569	3,836	3,628	624	4,252	416
Montana								
Hungry Horse	1,376	0	0	1,376	1,515	0	1,515	139
Milk River	52	0	113	165	56	126	182	17
Nevada-California								
Washoe	365	0	0	365	365	0	365	0
Newlands	0	10	0	10	0	0	0	(10)
New Mexico								
Brantley (new)	0	0	0	0	130	0	130	130
Carlsbad	23	1	32	56	23	32	55	(1)
Middle Rio Grande	7,368	62	1,471	8,901	6,595	1,244	7,839	(1,062)
New Mexico-Texas								
Pecos River Basin Water Salvage	350	4	0	354	350	0	350	(4)
Rio Grande	2,455	23	467	2,945	2,709	616	3,325	380
Oklahoma								
Washita Basin	20	0	0	20	20	0	20	0
McGee Creek	134	0	0	134	160	0	160	26
Oregon								
Crooked River	93	0	0	93	256	0	256	163
Rogue River Basin, Talent Division	198	10	0	208	215	0	215	7
Tualatin	40	0	60	100	38	57	95	(5)

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES

(In Thousands of Dollars)

PROJECT AND STATE	FISCAL YEAR 1986				FISCAL YEAR 1987			
	ALLOCATION OF APPROPRIATION	PRIOR YEAR FUNDS	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	ALLOCATION OF APPROPRIATION	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	FY 1987 CHANGE FROM FY 1986
Umatilla	64	3	31	98	41	19	60	(38)
Utah								
Provo River	102	3	0	105	175	0	175	70
Washington								
Columbia Basin	19,625	19	1,256	20,900	19,670	1,256	20,926	26
Yakima	1,885	27	497	2,409	2,727	649	3,376	967
Various States								
Pick-Sloan Missouri Basin Program:								
Kansas River Area	1,305	6	0	1,311	1,255	0	1,255	(56)
North Platte Area	7,939	209	523	8,671	7,946	1,082	9,028	357
Upper Missouri Area	8,215	93	62	8,370	7,594	62	7,656	(714)
Subtotal - PSMBP	17,459	308	585	18,352	16,795	1,144	17,939	(413)
Subtotal - Appropriated O&M Projects	118,958	7,819	7,547	134,324	136,641	8,306	144,947	10,623
APPROPRIATED O&M PROGRAMS:								
Various States								
Examination of Existing Structures	7,000	2,831	0	9,831	9,463	0	9,463	(368)
Water Management and Conservation	100	307	0	407	100	0	100	(307)
Land Resources Management Program	967	171	0	1,138	917	0	917	(221)
Miscellaneous Flood Control Operations	216	9	0	225	303	0	303	78
Negotiations and Administration of Water Marketing Contracts	10	15	19	44	10	19	29	(15)
Soil and Moisture Conservation Program	1,695	183	43	1,921	1,381	0	1,381	(540)
Reclamation Reform Program	3,719	478	0	4,197	1,185	0	1,185	(3,012)

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES

(In Thousands of Dollars)

PROJECT AND STATE	FISCAL YEAR 1986				FISCAL YEAR 1987			
	ALLOCATION OF APPROPRIATION	PRIOR YEAR FUNDS	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	ALLOCATION OF APPROPRIATION	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	FY 1987 CHANGE FROM FY 1986
Subtotal - Annual Appropriated O&M Programs	13,707	3,994	62	17,763	13,359	19	13,378	(4,385)
TOTAL - ANNUAL APPROPRIATED O&M ACTIVITIES	132,665	11,813	7,609	152,087	150,000	8,325	158,325	6,238
PERMANENT O&M APPROPRIATIONS Boulder Canyon Project	18,850	0	0	18,850	48,600	0	48,600	29,750
REVENUE O&M PROGRAM								
Colorado River Basin Project	0	17,994	84,484	102,478	0	84,470	84,470	(18,008)
Subtotal - CRBP	0	17,994	84,484	102,478	0	84,470	84,470	(18,008)
Colorado River Storage Project:								
Colorado Miscellaneous Flood Control Operations	0	0	13	13	0	15	15	2
New Mexico Navajo Unit	0	0	0	0	0	6,100	6,100	
New Mexico-Colorado San Juan - Chama Participating	0	61	760	821	0	1,411	1,411	590
Utah Central Utah Participating								
Bonneville Unit	0	1	930	931	0	690	690	(241)
Jensen Unit	0	0	85	85	0	85	85	0
Wyoming Seedskadee Participating	0	49	468	517	0	335	335	(182)

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES

(In Thousands of Dollars)

PROJECT AND STATE	FISCAL YEAR 1986				FISCAL YEAR 1987			
	ALLOCATION OF APPROPRIATION	PRIOR YEAR FUNDS	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	ALLOCATION OF APPROPRIATION	APPLIED REVENUES, NON-FEDERAL ADVANCES	TOTAL OBLIGATIONS	FY 1987 CHANGE FROM FY 1986
Various States Initial Units	0	1,194	14,465	15,659	0	13,251	13,251	(2,408)
Consumptive Use Studies	0	0	150	150	0	150	150	0
Land Resources Management	0	0	134	134	0	302	302	168
Quality of Water Studies	0	0	280	280	0	280	280	0
Emergency Funds	0	0	500	500	0	500	500	0
Examination of Existing Structures	0	0	1,070	1,070	0	775	775	(295)
Subtotal Colorado River Storage Project	0	1,305	18,855	20,160	0	23,894	23,894	3,734
TOTAL REVENUE O&M PROGRAM	0	19,299	103,339	122,638	0	108,364	108,364	(14,274)
Projects Financed Entirely with Advanced Funds:								
Rapid Valley	0	0	21	21	0	21	21	0
Subtotal	0	0	21	21	0	21	21	0
TOTAL O&M PROGRAM	151,515	31,112	110,969	293,596	198,600	116,710	315,310	21,714
(Appropriated and Revenues)								
Reduction for Gramm-Rudman	(6,516)	0	0	(6,516)	0	0	0	0
TOTAL O&M PROGRAM	144,999	31,112	110,969	287,080	198,600	116,710	315,310	21,714

OPERATION AND MAINTENANCE
APPROPRIATIONS, APPLIED REVENUES, AND NON-FEDERAL ADVANCES
FY 1986 - FY 1987
(In Thousands of Dollars)

Applied Revenues and Non-Federal Advances include the following types of funds:

	FY 1986	FY 1987
Water user advances	$ 7,015	$ 8,440
Trust funds		
Colorado-Big Thompson, Colorado	150	150
Middle Rio Grande, New Mexico	1,081	1,011
Rio Grande, New Mexico	--	55
Soil and Moisture Conservation Programs	43	--
Applied Operating Revenues		
Upper Colorado River Basin Fund	18,196	22,584
Lower Colorado River Basin Fund	84,484	84,470
Total	$ 110,969	$116,710
Permanent Appropriations (non-add)	18,850	48,600
Total	$129,819	$165,310

OPERATION AND MAINTENANCE OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	IRRIGATION		POWER		FLOOD CONTROL		OTHER		TOTAL OBLIGATIONS	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
APPROPRIATED O&M ACTIVITIES:										
Appropriated O&M Projects:										
Arizona-California-Nevada										
Boulder Canyon	0	0	6,500	3,000	0	0	0	0	6,500	3,000
Parker-Davis	0	0	2,937	2,642	0	0	785	876	3,722	3,518
Yuma Area Projects	237	237	0	0	8,462	10,297	1,871	4,326	10,570	14,860
California										
Cachuma	175	155	0	0	0	0	3	3	178	158
Central Valley	18,527	22,384	9,997	11,784	311	614	8,961	11,074	37,796	45,856
Orland	0	0	0	0	0	0	165	165	165	165
Solano	200	200	0	0	0	0	1,409	1,409	1,609	1,609
California-Oregon										
Klamath	652	592	0	0	95	95	22	22	769	709
Colorado										
Collbran	0	0	864	570	0	0	15	92	879	662
Colorado-Big Thompson	1,881	1,899	5,224	6,086	0	0	30	30	7,135	8,015
Fryingpan-Arkansas	306	336	952	916	27	27	545	545	1,830	1,824
Grand Valley, CRBSCP	0	0	0	0	0	0	0	50	0	50
Mancos	0	0	0	0	0	0	73	40	73	40
San Luis Valley	0	0	0	0	109	161	334	793	443	954
Idaho-Oregon										
Boise Area Projects	310	319	1,408	1,523	225	205	285	245	2,228	2,292

OPERATION AND MAINTENANCE
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	IRRIGATION		POWER		FLOOD CONTROL		OTHER		TOTAL OBLIGATIONS	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Idaho-Wyoming Minidoka Area Projects	568	624	2,470	2,674	360	483	438	471	3,836	4,252
Montana Hungry Horse	0	0	1,228	1,367	114	114	34	34	1,376	1,515
Milk River	141	156	0	0	13	15	11	11	165	182
Nevada-California Washoe	0	0	129	129	109	109	127	127	365	365
Newlands	0	0	0	0	0	0	0	0	10	0
New Mexico Brantley (new)	0	0	0	0	0	30	0	100	0	130
Carlsbad	32	32	0	0	23	22	1	1	56	55
Middle Rio Grande	390	233	0	0	7,430	6,595	1,081	1,011	8,901	7,839
New Mexico-Texas Pecos River Basin Water Salvage	0	0	0	0	0	0	354	350	354	350
Rio Grande	467	561	1,675	1,805	38	40	765	919	2,945	3,325
Oklahoma Washita Basin	0	0	0	0	20	20	0	0	20	20
McGee Creek	0	0	0	0	0	0	134	160	134	160
Oregon Crooked River	0	0	0	0	59	32	34	224	93	256
Rogue River Basin, Talent Division	0	0	199	206	4	4	5	5	208	215
Tualatin	21	20	0	0	14	13	65	62	100	95

OPERATION AND MAINTENANCE
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	IRRIGATION		POWER		FLOOD CONTROL		OTHER		TOTAL OBLIGATIONS	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Umatilla	31	19	0	0	16	10	51	31	98	60
Utah										
Provo River	0	0	86	159	0	0	19	16	105	175
Washington										
Columbia Basin	1,241	1,241	17,515	17,562	1,725	1,704	419	419	20,900	20,926
Yakima	497	657	1,339	1,480	407	614	166	625	2,409	3,376
Various States										
Pick-Sloan Missouri Basin Program:										
Kansas River Area	231	231	0	0	982	926	98	98	1,311	1,255
North Platte Area	1,483	2,390	6,806	6,227	163	190	219	221	8,671	9,028
Upper Missouri Area	216	204	5,349	5,858	1,829	636	976	958	8,370	7,656
Subtotal - PSMGP	1,930	2,825	12,155	12,085	2,974	1,752	1,293	1,277	18,352	17,939
Subtotal - Appropriated O&M Projects	27,606	32,490	64,678	63,988	22,535	22,956	19,505	25,513	134,324	144,947
APPROPRIATED O&M PROGRAMS										
Various States										
Examination of Existing Structures	0	0	0	0	9,831	9,463			9,831	9,463
Water Management and Conservation	0	0	0	0	0	0	407	100	407	100
Land Resources Management Program	0	0	0	0	0	0	1,137	917	1,138	917
Miscellaneous Flood Control Operations	0	0	0	0	225	303	0	0	225	303
Negotiations and Administration of Water Marketing Contracts	44	29	0	0	0	0	0	0	44	29
Soil and Moisture Conservation Program	0	0	0	0	0	0	1,921	1,381	1,921	1,381
Reclamation Reform Program	4,197	1,185	0	0	0	0			4,197	1,185

OPERATION AND MAINTENANCE
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	IRRIGATION		POWER		FLOOD CONTROL		OTHER		TOTAL OBLIGATIONS	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Subtotal - Annual Appropriated O&M Programs	4,241	1,214	0	0	10,056	9,766	13,296	11,861	17,763	13,378
TOTAL - ANNUAL APPROPRIATED O&M ACTIVITIES	31,847	33,704	64,678	63,988	32,591	32,722	32,801	37,374	152,087	158,325
Permanent O&M Appropriations Boulder Canyon Project	0	0	18,850	48,600	0	0	0	0	18,850	48,600
REVENUE O&M PROGRAM										
Colorado River Basin Project	6,704	6,690	95,774	77,780	0	0	0	0	102,478	84,470
Subtotal - CRBP	6,704	6,690	95,774	77,780	0	0	0	0	102,478	84,470
Colorado River Storage Project:										
Colorado										
Miscellaneous Flood Control Operations	0	0	0	0	13	15	0	0	13	15
New Mexico										
Navajo Unit	0	6,100	0	0	0	0	0	0	0	6,100
New Mexico-Colorado										
San Juan - Chama Participating	181	374	0	0	0	0	640	1,037	821	1,411
Utah										
Central Utah Participating										
Bonneville Unit	0	0	0	0	0	0	931	690	931	690
Jensen Unit	0	0	0	0	0	0	85	85	85	85
Wyoming										
Seedskadee Participating	0	0	442	260	0	0	75	75	517	335
Various States										

OPERATION AND MAINTENANCE OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	IRRIGATION		POWER		FLOOD CONTROL		OTHER		TOTAL OBLIGATIONS	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Initial Units	0	0	15,482	13,043	9	10	168	178	15,659	13,251
Consumptive Use Studies	0	0	0	0	0	0	150	150	150	150
Land Resources Management	0	0	0	0	0	0	134	302	134	302
Quality of Water Studies	0	0	0	0	0	0	280	280	280	280
Emergency Funds	0	0	250	250	250	250	0	0	500	500
Examination of Existing Structures	0	0	0	0	1,070	775	0	0	1,070	775
Subtotal Colorado River Storage Project	181	6,474	16,174	13,553	1,342	1,050	2,463	2,817	20,160	23,894
TOTAL REVENUE O&M PROGRAM	6,885	13,164	111,948	91,333	1,342	1,050	2,463	2,817	122,638	108,364
Projects Financed Entirely with Advanced Funds:										
Rapid Valley	21	21	0	0	0	0	0	0	21	21
Subtotal	21	21	0	0	0	0	0	0	21	21
TOTAL O&M PROGRAM (Appropriated and Revenues)	38,753	46,889	195,476	203,921	33,933	33,772	35,264	40,191	293,596	315,310

OPERATION AND MAINTENANCE
DETAILS FOR "OTHER"
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	M&I WATER		FISH AND WILDLIFE		WATER CONTROL		RECREATION		LAND RESOURCES MANAGEMENT		TOTAL OTHER	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
APPROPRIATED O&M ACTIVITIES:												
Appropriated O&M Projects:												
Arizona-California-Nevada												
Boulder Canyon	0	0	0	0	0	0	0	0	0	0	0	0
Parker-Davis	785	876	0	0	0	0	0	0	0	0	785	876
Yuma Area Projects	0	0	52	117	1,816	4,206	3	3	0	0	1,871	4,326
California												
Cachuma	0	0	0	0	0	0	3	3	0	0	3	3
Central Valley	990	1,594	7,540	8,878	10	28	421	574	0	0	8,961	11,074
Orland	0	0	0	0	0	0	165	165	0	0	165	165
Solano	0	0	0	0	0	0	1,409	1,409	0	0	1,409	1,409
California-Oregon												
Klamath	0	0	0	0	0	0	22	22	0	0	22	22
Colorado												
Collbran	0	0	0	0	0	0	0	0	15	92	15	92
Colorado-Big Thompson	0	0	0	0	0	0	30	30	0	0	30	30
Fryingpan-Arkansas	240	240	285	285	0	0	20	20	0	0	545	545
Grand Valley, CRBSCP	0	0	0	0	0	50	0	0	0	0	0	50
Mancos	0	0	0	0	0	0	73	40	0	0	73	40
San Luis Valley	0	0	0	0	333	792	1	1	0	0	334	793
Idaho-Oregon												
Boise Area Projects	0	0	23	22	0	0	242	201	20	22	285	245

OPERATION AND MAINTENANCE
DETAILS FOR "OTHER"
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	M&I WATER		FISH AND WILDLIFE		WATER CONTROL		RECREATION		LAND RESOURCES MANAGEMENT		TOTAL OTHER	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Idaho-Wyoming												
Minidoka Area Projects	38	39	220	236	0	0	153	169	27	27	438	471
Montana												
Hungry Horse	0	0	16	16	0	0	18	18	0	0	34	34
Milk River	0	0	0	0	11	11	0	0	0	0	11	11
Nevada-California												
Washoe	0	0	127	127	0	0	0	0	0	0	127	127
Newlands	0	0	0	0	0	0	10	0	0	0	10	0
New Mexico												
Brantley (new)	0	0	0	100	0	0	0	0	0	0	0	100
Carlsbad	0	0	0	0	0	0	1	1	0	0	1	1
Middle Rio Grande	0	0	0	0	1,081	1,011	0	0	0	0	1,081	1,011
New Mexico-Texas												
Pecos River Basin Water Salvage	0	0	0	0	354	350	0	0	0	0	354	350
Rio Grande	0	0	0	0	691	814	19	26	55	79	765	919
Oklahoma												
Washita Basin	0	0	0	0	0	0	0	0	0	0	0	0
McGee Creek	0	0	100	116	0	0	34	44	0	0	134	160
Oregon												
Crooked River	0	0	21	11	0	0	13	213	0	0	34	224
Rogue River Basin, Talent Division	0	0	5	5	0	0	0	0	0	0	5	5

OPERATION AND MAINTENANCE
DETAILS FOR "OTHER"
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	M&I WATER		FISH AND WILDLIFE		WATER CONTROL		RECREATION		LAND RESOURCES MANAGEMENT		TOTAL OTHER	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Tualatin	25	24	9	9	14	13	17	16	0	0	65	62
Umatille	0	0	49	30	0	0	2	1	0	0	51	31
Utah												
Provo River	0	0	0	0	0	0	0	0	19	16	19	16
Washington												
Columbia Basin	0	0	272	272	37	37	20	20	90	90	419	419
Yakima	0	0	110	553	0	0	56	72	0	0	166	625
Various States												
Pick-Sloan Missouri Basin Program:												
Kansas River Area	4	4	29	29	0	0	65	65	0	0	98	98
North Platte Area	0	0	0	0	0	0	68	68	151	153	219	221
Upper Missouri Area	305	277	168	82	0	0	503	599	0	0	976	958
Subtotal - PSMBP	309	281	197	111	0	0	636	732	151	153	1,293	1,277
Subtotal - Appropriated O&M Projects	2,387	3,054	9,026	10,888	4,347	7,312	3,368	3,780	377	479	19,505	25,513
APPROPRIATED O&M PROGRAMS												
Various States												
Examination of Existing Structures	0	0	0	0	0	0	0	0	0	0	9,831	9,463
Water Management and Conservation	0	0	0	0	407	100	0	0	0	0	407	100
Land Resources Management Program	0	0	0	0	0	0	1,137	0	439	917	1,137	917
Miscellaneous Flood Control Operations	0	0	0	0	0	0	0	0	0	0	0	0
Negotiations and Administration of Water Marketing Contracts	0	0	0	0	0	0	0	0	0	0	0	0
Soil and Moisture												

OPERATION AND MAINTENANCE DETAILS FOR "OTHER" OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	M&I WATER		FISH AND WILDLIFE		WATER CONTROL		RECREATION		LAND RESOURCES MANAGEMENT		TOTAL OTHER	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Conservation Program	0	0	0	0	1,921	1,381	0	0	0	0	1,921	1,381
Reclamation Reform Program	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal - Annual Appropriated O&M Programs	0	0	0	0	2,328	1,481	1,137	0	439	917	13,296	11,861
TOTAL - ANNUAL APPROPRIATED O&M ACTIVITIES	2,387	3,054	9,026	10,888	6,675	8,793	4,505	3,780	816	1,396	32,801	37,374
Permanent O&M Appropriations Boulder Canyon Project	0	0	0	0	0	0	0	0	0	0	0	0
REVENUE O&M PROGRAM												
Colorado River Basin Project	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal - CRBP	0	0	0	0	0	0	0	0	0	0	0	0
Colorado River Storage Project:												
Colorado												
Miscellaneous Flood Control Operations	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico												
Navajo Unit	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico-Colorado												
San Juan - Chama Participating	432	890	7	7	201	140	0	0	0	0	640	1,037
Utah												
Central Utah Participating												
Bonneville Unit	0	0	0	0	0	0	931	690	0	0	931	690
Jensen Unit	0	0	0	0	0	0	85	85	0	0	85	85
Wyoming												

OPERATION AND MAINTENANCE
DETAILS FOR "OTHER"
OBLIGATIONS BY FUNCTION

(In Thousands of Dollars)

PROJECT AND STATE	M&I WATER		FISH AND WILDLIFE		WATER CONTROL		RECREATION		LAND RESOURCES MANAGEMENT		TOTAL OTHER	
	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987	FY 1986	FY 1987
Seedskadee Participating	29	32	0	0	0	0	46	43	0	0	75	75
Various States Initial Units	60	72	108	126	0	0	0	0	0	0	168	198
Consumptive Use Studies	0	0	0	0	150	150	0	0	0	0	150	150
Land Resources Management	0	0	0	0	0	0	0	0	134	302	134	302
Quality of Water Studies	0	0	0	0	280	280	0	0	0	0	280	280
Emergency Funds	0	0	0	0	0	0	0	0	0	0	0	0
Examination of Existing Structures	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Colorado River Storage Project	521	994	115	133	631	570	1,062	818	134	302	2,463	2,817
TOTAL REVENUE O&M PROGRAM	521	994	115	133	631	570	1,062	818	134	302	2,463	2,817
Projects Financed Entirely with Advanced Funds:												
Rapid Valley	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL O&M PROGRAM (Appropriated and Revenues)	2,908	4,048	9,141	11,021	7,306	9,363	5,567	4,598	950	1,698	35,264	40,191

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Operation and Maintenance Program 1/

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
BOULDER CANYON PROJECT	6,500,000	279,500	6,220,500
PARKER-DAVIS PROJECT	2,484,000	106,812	2,377,188
YUMA AREA PROJECTS O/M	4,070,000	175,010	3,894,990
COLORADO-BIG THOMPSON PROJECT	5,761,000	247,723	5,513,277
FRYINGPAN-ARKANSAS PROJECT	1,777,000	76,411	1,700,589
MILK RIVER PROJECT	52,000	2,236	49,764
KANSAS RIVER AREA O/M, P-SMBP	1,305,000	56,115	1,248,885
NORTH PLATTE AREA O/M, P-SMBP	7,939,000	341,377	7,597,623
UPPER MISSOURI O/M, P-SMBP	8,215,000	353,245	7,861,755
PICK-SLOAN MISSOURI BASIN PRGM	17,459,000	750,737	16,708,263
CACHUMA PROJECT	178,000	7,654	170,346
CENTRAL VALLEY PROJECT O/M	37,687,000	1,620,541	36,066,459
KLAMATH PROJECT	634,000	27,262	606,738
ORLAND PROJECT	165,000	7,095	157,905
SOLANO PROJECT	1,609,000	69,187	1,539,813
WASHOE PROJECT	365,000	15,695	349,305
BOISE PROJECT	1,918,000	82,474	1,835,526
COLUMBIA BASIN PROJECT O/M	19,625,000	843,875	18,781,125
CROOKED RIVER PROJECT	93,000	3,999	89,001
HUNGRY HORSE PROJECT	1,376,000	59,168	1,316,832
MINIDOKA AREA PROJECTS	3,267,000	140,481	3,126,519
ROGUE RIVER, TALENT DIVISION	198,000	8,514	189,486
TUALATIN PROJECT	40,000	1,720	38,280
UMATILLA PROJECT	64,000	2,752	61,248
YAKIMA PROJECT	1,885,000	81,055	1,803,945
CARLSBAD PROJECT	23,000	989	22,011
MC GEE CREEK PROJECT	134,000	5,762	128,238
MIDDLE RIO GRANDE PROJECT	7,368,000	316,824	7,051,176
PECOS RIV BSN WTR SALVAGE PROJ	350,000	15,050	334,950
RIO GRANDE PROJECT	2,455,000	105,565	2,349,435
SAN LUIS VAL PROJ, CONEJOS DIV	110,000	4,730	105,270
SAN LUIS VALLEY, CLOSED BASIN	328,000	14,104	313,896
SAN LUIS VALLEY PROJECT	438,000	18,834	419,166

Project	Enacted BA FY 1986	Application of PL 99-177	Adjusted BA FY 1986
WASHITA BASIN PROJECT	20,000	860	19,140
COLLBRAN PROJECT	800,000	34,400	765,600
MANCOS PROJECT	61,000	2,623	58,377
PROVO RIVER PROJECT	102,000	4,386	97,614
O/M PROJECTS	118,958,000	5,115,599	113,842,401
EXAM OF EXISTING STRUCTURES	7,000,000	301,000	6,699,000
LAND RESOURCES MANAGEMENT PRGM	967,000	41,581	925,419
MISC FLOOD CONTROL OPERATIONS	216,000	9,288	206,712
NEGO/ADMIN OF WATER MARKETING	10,000	430	9,570
RECLAMATION REFORM PROGRAM	3,719,000	159,917	3,559,083
SOIL AND MOISTURE CONSERVATION	1,695,000	72,885	1,622,115
WATER MGMT/CONSERVATION PRGM	100,000	4,300	95,700
O/M PROGRAMS	13,707,000	589,401	13,117,599
OPERATION AND MAINTENANCE	132,665,000	5,705,000	126,960,000

1/ Excludes reduction applied to Permanent Appropriation associated with O & M Program.

Bureau of Reclamation
Explanation of Changes In Appropriation Requirements
From FY 1986 To FY 1987

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Annual Appropriations Projects:			
Arizona-California-Nevada			
Parker-Davis Project	$2,484,000	$2,642,000	$ + 158,000

The increase includes $144,000 for replacements and additions; $100,000 for water scheduling, and $11,000 for materials and supplies. Partially offsetting is a decrease of $97,000 for extraordinary maintenance.

Replacement and addition items in FY 1987 total $272,000 and at Parker Division include $100,000 for 500 KVA station service transformers; and $15,000 for tools and work equipment; and at Davis Division include $70,000 for heat exchangers, $60,000 for transformers and capacitors; $20,000 for tools and equipment; and $7,000 for miscellaneous equipment.

Extraordinary maintenance items total $78,000 and at Parker Division includes $20,000 to paint spillway gates; and $15,000 for cooling water lines; and at Davis Division include $20,000 for spillway gates; $15,000 to paint scroll cases; $8,000 for penstock expansion joint repairs.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Yuma Area Projects - Consolidated	$4,070,000	$14,860,000	$+10,790,000
The increase includes $2,290,000 for O&M of new facilities at the Yuma Desalting Plant; $638,000 for project equipment; $495,000 for stockpile contracts; $472,000 in general operating expenses; $112,000 for materials and supplies; $100,000 for Yuma Projects Office relocation costs; $100,000 for power costs at the Protective and Regulatory Pumping Unit wellfield; $65,000 for O&M of Fish and Wildlife mitigation features; and $18,000 for river survey contracts. Replacements and additions in FY 1987 total $1,035,000 and include: $300,000 for (3) dump trucks; $160,000 for replacement of two workboats in the dredge program; $200,000 for miscellaneous project and dredge yard equipment; $140,000 for (3) forklifts; $100,000 for a water tanker; $70,000 for a boom truck; and $65,000 for two trailers.			
Arizona - Nevada			
Boulder Canyon Project	$6,500,000	$3,000,000	$-3,500,000
Increase includes $3,000,000 to complete the repairs and modifications to the Arizona and Nevada spillway tunnels.			
California			
Cachuma Project	$178,000	$158,000	$ - 20,000
Reflects a decrease of $20,000 in extraordinary maintenance items.			

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
California			
Central Valley Project	$37,687,000	$45,856,000	$+8,169,000

The increase includes $1,730,000 for replacements and additions; $6,068,000 for extraordinary maintenance; $371,000 for payments to State of California for operation and maintenance of San Luis Unit and Nimbus Hatchery.

The total fiscal year 1987 replacements and additions program of $3,996,000 includes: $884,000 for Keswick Powerplant units 1, 2 and 3 rewind; $660,000 for Dos Amigos rewind; $504,000 for Centralized Water and Power System control replacement, microwave network, fixed-head disks and spare parts; $402,000 for Folsom 230-kv breakers; $245,000 for Friant supervisory control equipment; $239,000 for motor vehicles; $216,000 for O'Neill spare parts; $160,000 for Nimbus trashrake; $134,000 for Tracy station service system; $98,000 for Natomas pipeline bypass; $85,000 for Shasta auditorium modification and associated equipment; $80,000 for Folsom telephone equipment; $60,000 for Shasta Dam domestic water; $54,000 for Tracy fish screen equipment; $50,000 for New Melones breaker parts; $50,000 for rewedging Folsom units; $50,000 for O'Neill spare pump bowl; and $25,000 for Los Banos tilt-bed trailer.

The total fiscal year 1987 extraordinary maintenance program of $6,833,000 includes: $5,600,000 for wheeling charges; $245,000 to remove silt from Tehama-Colusa settling ponds and dredge fish facility settling basin; $210,000 for Delta-Mendota Canal check gate cathodic protection; $200,000 for paving Tehama-Colusa Canal dual-purpose road; $200,000 for Trinity outlet works rock barrier; $180,000 to clean Folsom Dam drains; $134,000 for Fraint gantry crane repair; $32,000 for Fraint Dam fixed-wheel gate seals; and $32,000 for J.F. Carr and Trinity Powerplant transfer trip.

State and Project	FY 1986	FY 1987	Amount of Change
Orland Project	$ 165,000	$ 165,000	$ --

No change.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Solano Project	$1,609,000	$1,609,000	$ ---

No Change

California-Oregon

Klamath Project	$634,000	$574,000	$ -60,000

Reflects a decrease of $60,000 in replacement and addition items.

Colorado

Collbran Project	$800,000	$662,000	$ -138,000

The decrease is due to a decrease in extraordinary maintenance $156,000; the amount to operate and maintain project based on historical data $22,000; and in replacements and additions $37,000; offset by increase for Land Resources Management for survey of South Canal $77,000.

The FY 1987 replacements and additions program totals $68,000 and includes: $10,000 for powerplant roofs; $30,000 for a Radio/Telephone Microwave System for SCADA; and $28,000 for purchase of miscellaneous equipment.

Extraordinary maintenance in FY 1987 totals $126,000 and includes: $103,000 to repair Big Meadows Dam and $23,000 to complete Kitson Dam repair.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Colorado-Big Thompson Project	$5,761,000	$6,806,000	$ +1,045,000

Increase of $1,045,000 includes $814,000 for replacement and addition items and $317,000 for materials, supplies and other miscellaneous items; partially offset by a decrease of $86,000 for extraordinary maintenance items.

Replacements and Additions total $2,555,000 in FY 1987 and include: $700,000 to rewind stator at Pole Hill Powerplant; $60,000 for the excitation control equipment at Green Mountain Powerplant; $230,000 for miscellaneous replacements, additions, and safety equipment throughout the Project; $604,000 to upgrade the UHF radio system; $550,000 to install a fiber optic cable through Alva B. Adams Tunnel; $189,000 to replace runners and draft tube at Unit No. 3 at Flatiron; $136,000 to replace unit lead on Units 1, 2, 3, at Estes Powerplant; $61,000 for South Platte area supervisory control and plant modernization; and $25,000 to replace roof at Willow Creek Pumping Plant.

Fryingpan-Arkansas Project	$1,777,000	$1,824,000	$ + 47,000

Increase of $47,000 includes $226,000 for materials and supplies and other ongoing items; partially offset by a decrease of $173,000 for Replacements and Additions and $6,000 for Extraordinary Maintenence. Replacements and additions total $87,000 in fiscal year 1987 for miscellaneous items.

Grand Valley Unit-Colorado River Basin Salinity Control Project	$ ---	$50,000	$ + 50,000

The increase is due to the need to repay the operation and maintenance costs of salinity control portions of existing projects.

Mancos Project	$61,000	$40,000	$ - 21,000

Decrease due to completion of management plan in FY 1986 and revised estimate of needs for Land Resource Management.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
San Luis Valley Project **Closed Basin**	$328,000	$792,000	$ + 464,000

The increase includes $391,000 for operation and maintenance of new facilities on the Closed Basin Division and $73,000 for replacements and additions.

Replacements and additions for fiscal year 1987 total $98,000 and include $88,000 for a backhoe and $10,000 for miscellaneous tools and equipment.

Conejos Division	$110,000	$162,000	$ + 52,000

The increase includes $40,000 for replacements and additions, $9,000 for E&RC charges and $3,000 for other recurring expenses.

Replacements and additions for fiscal year 1987 total $100,000 for automation of outlet works at Platoro Dam.

Idaho-Oregon

Boise Area Projects	$1,918,000	$1,973,000	$ + 55,000

Reflects $49,000 increase in routine O&M expense; $28,000 increase in replacements and additions; and $10,000 increase in materials and supplies, partially offset by $32,000 decrease in extraordinary maintenance.

Replacements and additions total $130,000 in FY 1987 and include: $50,000 for a warehouse building at Black Canyon Powerplant; $53,000 for miscellaneous equipment; $20,000 for vehicles; and $7,000 for supervisory control equipment.

The FY 1987 extraordinary maintenance program totals $11,000 and includes: $6,000 for Anderson Ranch spillway gate repair; and $5,000 for fencing repair at Anderson Ranch Dam and Reservoir.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Idaho-Wyoming			
Minidoka Area	$3,267,000	$3,628,000	$ + 361,000

Reflects a $144,000 increase in extraordinary maintenance; $103,000 increase for replacements and additions; $96,000 increase in routine O&M expense; and $18,000 increase for materials and supplies.

Replacements and additions total $372,000 in FY 1987 and include, $141,000 for land acquisition at American Falls Dam; $82,000 for miscellaneous equipment acquisitions; $79,000 for vehicles; $37,000 to replace transformers containing Polyclorinated Biphenyls (PCB's); and $33,000 for PCB disposal.

Extraordinary maintenance totals $158,000 in FY 1987 and includes $90,000 to resurface Palisades Powerplant access road; $50,000 to initiate the uprate program, Palisades Powerplant; $14,000 for spillway gate replacement at Minidoka Dam; and $4,000 to repair low level outlet gates at American Falls Dam.

State and Project	FY 1986	FY 1987	Amount of Change
Montana			
Hungry Horse	$1,376,000	$1,515,000	$ + 139,000

Reflects a $175,000 increase in extraordinary maintenance, partially offset by $36,000 decrease in routine O&M expense.

The FY 1987 replacement and addition program totals $10,000 for miscellanenous replacement and addition items.

The FY 1987 extraordinary maintenance program totals $175,000 and includes $100,000 to seal coat service roads and parking areas, and $75,000 to begin generator uprate program.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Milk River Project	$52,000	$56,000	$ + 4,000
The increase includes $1,000 for general expense and $3,000 for a settlement point survey.			
Nevada-California			
Washoe Project	$365,000	$365,000	$ --
No Change.			
New Mexico			
Brantley Project	$ --	$130,000	$ + 130,000
The increase provides for operation and maintenance costs of Brantley dam and reservoir and reimbursement to the New Mexico State Park and Recreation Commission for operation and maintenance of the wildlife mitigation areas.			
Carlsbad Project	$23,000	$23,000	$ --
No Change.			

State and Project	FY 1986	FY 1987	Amount of Change
Middle Rio Grande Project	$7,368,000	$6,595,000	$ - 773,000

The decrease of $773,000 includes $917,000 for extraordinary maintenance, partially offset by increases of $78,000 for replacements and additions and $66,000 for other operating expenses.

Replacements and additions for FY 1987 total $660,000 and include $200,000 for a hydraulic exacavator; $180,000 for a dragline; $90,000 for a water truck; $50,000 for a knuckle boom truck; $50,000 for miscellaneous tools and equipment; $40,000 for a mechanics truck; $30,000 for a lowboy trailer; and $20,000 for two 4X4 pickups.

Extraordinary maintenance for FY 1987 totals $3,069,000 and includes $2,099,000 for rehabilitation of the low-flow conveyance channel; $900,000 for rehabilitation of structures; and $70,000 for jetty installations.

New Mexico-Texas

State and Project	FY 1986	FY 1987	Amount of Change
Pecos River Basin Water Salvage	$350,000	$350,000	$ --

No change.

State and Project	FY 1986	FY 1987	Amount of Change
Rio Grande Project	$2,455,000	$2,709,000	$ + 254,000

The increase includes $113,000 for extraordinary maintenance; $55,000 for phreatophyte control; $47,000 for replacements and additions; $34,000 for other recurring operating expenses; and $5,000 for materials and supplies.

Replacements and additions for FY 1987 total $645,000 and include $201,000 for powerplant emergency station-service; $80,000 for powerplant station service and lighting transformer; $80,000 for powerplant modifications required to increase personnel safety; $50,000 for cooperative flow measurement program; $50,000 to continue electronic water measuring system; $35,000 for computer equipment; $30,000 for a powerplant security system; $25,000 for flood benefits study; $20,000 to continue a groundwater study; $20,000 to continue powerplant modifications; $20,000 for powerplant control room climate control; $19,000 for miscellaneous tools and equipment; and $15,000 for Elephant Butte Dam modifications required to increase personnel safety.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Extraordinary maintenance for FY 1987 totals $133,000 and includes $70,000 for a unit overhaul; $25,000 for painting of penstocks; $25,000 to continue repair of draft gate guides at Elephant Butte Dam; and $13,000 for concrete repair of Elephant Butte Dam.			
Oklahoma			
McGee Creek Project	$134,000	$160,000	$ + 26,000
The increase reflects the Federal share of reimbursable operation and maintenance costs to be incurred by the managing entities, the Oklahoma Tourism and Recreation Department and the Oklahoma Department of Wildlife Conservation.			
Washita Basin Project	$20,000	$20,000	--
No change.			
Oregon			
Crooked River Project	$93,000	$256,000	$ + 163,000
Reflects an increase $200,000 for operation and maintenance expenses due to rehabilitation of sanitary facilities; increased contract costs for law enforcement; and routine operation and maintenance contracts; partially offset by $37,000 decrease in extraordinary maintenance.			
Rogue River Basin, Talent Division	$198,000	$215,000	$ + 17,000
Reflects an increase of $22,000 in routine operation and maintenance expense partially offset by $5,000 decrease in extraordinary maintenance.			
Replacements and additions total $5,000 in FY 1987 for miscellaneous equipment acquisitions.			

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Tualatin Project	$40,000	$38,000	$ - 2,000

Reflects a decrease of $2,000 in biennial settlement surveys performed in FY 1986.

Umatilla Project	$64,000	$41,000	$ - 23,000

Reflects $23,000 decrease in extraordinary maintenance.

The FY 1987 replacement and addition program totals $1,000 for miscellaneous replacement and addition items.

Utah

Provo River Project	$102,000	$175,000	$ + 73,000

Increase includes $63,000 in extraordinary maintenance; $10,000 for reimbursement to the Provo River Water Users Association for operation and maintenance of the Deer Creek Powerplant; $3,000 for regular operation and maintenance; offset by a decrease in land resources management activities $3,000.

Extraordinary maintenance for FY 1987 totals $70,000 for overhaul of the generator units.

Washington

Columbia Basin Project	$19,625,000	$19,670,000	$ + 45,000

Reflects an increase of $505,000 for replacement and addition items partially offset by a decrease of $311,000 for extraordinary maintenance work and an offsetting reduction in routine operation and maintenance expense of $149,000 primarily due to a shift in project labor from routine to extraordinary type maintenance.

Replacements and Additions total $4,473,000 in FY 1987 and include: $2,450,000 for main unit transformer replacement program; $790,000 for miscellaneous equipment; $315,000 for ozone abatement program; $290,000 for 480 VAC power distribution circuit breakers G1-G18; $280,000 for wheel replacement P1-P6; $120,000 for vehicles; $80,000 for fire safety modifications; $60,000 for air compressors for circuit breakers; $25,000 for industrial area dust collectors; $23,000 for modifications for the handicapped; $20,000 for replacing polyclorinated biphenyl main unit potential capacitors; and $20,000 for warehouse bar coding equipment.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of change

The FY 1987 Extraordinary Maintenance program totals $1,300,000 and includes the following: $850,000 for G1-G18 turbine overhauls; $250,000 for 102-inch ring seal gate repair; $100,000 to clean foundation uplift drains; $42,000 for coaster gate seal material; $30,000 for Crescent Bay Lake rehabilitation; $20,000 for main unit protective relays; and $8,000 for CO_2 extinguisher modifications.

State and Project	FY 1986	FY 1987	Amount of change
Yakima Project	$1,885,000	$2,727,000	$ + 842,000

Reflects an increase of $425,000 for the operation and maintenance of new fish facilities, $223,000 in extraordinary maintenance, $123,000 increase in replacement and addition items, and $71,000 increase in routine O&M expense.

The FY 1987 replacement and addition program totals $280,000 and includes: $78,000 for vehicle acquisitions, $75,000 for miscellaneous equipment; $30,000 to purchase a standby generator; $30,000 for a snow cat; $30,000 for a stakebed truck; $25,000 for a 4X4 van; and $12,000 for a cable crossing.

Extraordinary maintenance totals $263,000 in FY 1987 and includes: $71,000 to rehabilitate Kachess outlet tunnel; $46,000 for asphalt lining of Roza Canal; $45,000 for pole testing and stubbing; $33,000 to rehabilitate Tieton spillway footbridge; $24,000 for Kachess footbridge rehabilitation; $18,000 for Chandler Canal silt removal; $12,000 to replace Kachess powerline; $8,000 for Tieton jet flow valves; and $6,000 for Kachess inlet inspection.

Various States

Pick-Sloan Missouri Basin Program:

State and Project	FY 1986	FY 1987	Amount of change
Kansas River Area-PSMBP	$1,305,000	$1,255,000	$ - 50,000

Decrease reflects a reduction of $54,000 for replacements and additions and $62,000 for extraordinary maintenance items; partially offset by $56,000 increase in other costs and $10,000 for materials and supplies.

Replacements and additions total $55,000 in fiscal year 1987 for miscellaneous items.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
North Platte Area-PSMBP	$7,939,000	$7,946,000	$ + 7,000

Increase includes $831,000 for extraordinary maintenance items, offset by a decrease of $352,000 for replacement and addition items, and $472,000 for supplies and other noncontract expenses mainly as the result of the ending of O&M of the Wind Hydroelectric turbines.

Replacements and additions total $2,466,000 in FY 1987 and include $855,000 to replace Casper Programmable Master Supervisory Control System (PMSC); $653,000 for Fremont Powerplant uprating; $550,000 to replace a needle valve at Seminoe; $213,000 for miscellaneous replacements and additions; $100,000 for generator cables at Kortes; $55,000 to replace Distribution Panels at Seminoe; and $40,000 for communication equipment additions.

Extraordinary Maintenance items total $1,354,000 which includes $1,191,000 for Pathfinder outlet works repair; $123,000 to repair the Glendo Dike; and $40,000 for rock scaling at Seminoe, Glendo, and Kortes.

State and Project	FY 1986	FY 1987	Amount of Change
Upper Missouri Area-PSMBP	$8,215,000	$7,594,000	$ - 621,000

Decrease includes $832,000 decrease in replacements, additions, and extraordinary maintenance; $139,000 decrease in noncontract costs associated with replacements, additions, and extraordinary maintenance and $75,000 decrease in other charges. This is partially offset by increases of $153,000 for materials and supplies; $118,000 for other costs; $86,000 for wages and salaries; and $68,000 for miscellaneous items and completions.

Replacements and additions for fiscal year 1987 total $629,000 and include: $133,000 for air circuit breakers; $100,000 for oil spill containment facility; $93,000 for replacement of warehouse; $67,000 for direct current breakers; $60,000 for miscellaneous replacement and addition items; $40,000 for temperature recorders; $40,000 for sequence of events recorder; $39,000 for dashpot and assembly units; $22,000 for standby generator; $20,000 for miscellaneous equipment; and $15,000 for temperature recorders.

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Extraordinary maintenance for fiscal year 1987 totals $525,000 and includes: $120,000 for air and oil circuit breakers; $83,000 for repair of spillway tunnel and basin; $82,000 for Pilot Butte Penstock; $45,000 for repairing sluiceway gates; $33,000 for grouting and inspection of tunnel iron repair; $30,000 for repair of hollow jet valves; $28,000 for repair of fixed wheel gate; $22,000 for crane cables at Yellowtail Powerplant; $22,000 for painting of Spillway Stoplogs; $22,000 to x-ray high voltage cables; $16,000 for turbine bearings; $11,000 for generator covers; and $11,000 for repairing hydraulic gates.			
Subtotal-Pick Sloan Missouri Basin Program	($17,459,000)	($16,795,000)	($ 664,000)
SUBTOTAL - ANNUAL APPROPRIATED O&M PROJECTS	$118,958,000	$136,641,000	$+17,683,000

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Annual Associated Programs			
Various States			
Examination of Existing Structures	$7,000,000	$9,463,000	$+2,463,000
Increase is due mainly to continuing replacement of faulty needle valves on Dams Bureauwide and for greater regional requirements for analysis activities and seismotectonic studies.			
Miscellaneous Flood Control Operations	$ 216,000	$ 303,000	$ + 87,000
The increase includes $68,000 for acquisition of basic hydromet equipment at critical reservoirs and $30,000 for increased hydromet maintenance.			
Water Management and Conservation Program	$ 100,000	$ 100,000	$ --
No change			
Negotiation and Administration of Water Marketing Contracts	$ 10,000	$ 10,000	$ --
No change			
Reclamation Reform Program	$ 3,719,000	$ 1,185,000	$-2,534,000
The decrease is due to reduced requirements for land classification and economic studies among several regions in order to administer provisions of the Reclamation Reform Act of 1982.			

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Land Resources Management:			
Pacific Northwest Region	$ 10,000	$ 10,000	$ --
No Change			
Mid-Pacific Region	$ 73,000	$ 73,000	$ --
No Change			
Upper Colorado Region	$ 215,000	$ 180,000	$ - 35,000
Reflects decrease in land management activities at Utah projects by $35,000, and Colorado projects by $10,000 due to decrease in program scope. Offsetting increase at Idaho projects $1,000 and Wyoming projects $9,000, is due to new project start and increased activities.			
Southwest Region	$ 65,000	$ 85,000	$ + 20,000
The increase is required for materials and supplies which will be used to construct and install warning signs at various hazardous areas on Reclamation lands.			
Missouri Basin Region	$ 504,000	$ 469,000	$ - 35,000
Decrease is due to $22,000 decrease in land use inventory, $10,000 decrease in salaries, $6,000 reduction in trespass resolution, and $1,000 decrease in materials and supplies, partially offset by $4,000 increase in miscellaneous items.			

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Washington Office	$ 100,000	$ 100,000	$ --
No change.			
Subtotal-Land Resources Management	($ 967,000)	($ 917,000)	($ - 50,000)
Soil and Moisture Conservation			
Pacific Northwest Region	$ 250,000	$ 250,000	$ --
No change.			
Mid Pacific Region	$ 400,000	$ 370,000	$ - 30,000
The decrease is due to a reduction in materials and supplies purchases.			
Upper Colorado Region	$ 420,000	$ 411,000	$ - 9,000
Reflects decrease in program requirements for soil conservation activities at Utah projects $8,000; and Wyoming projects $14,000; and region administration $5,000; offsetting increases in Colorado and New Mexico Projects by $18,000 for erosion control. Conservation activities in FY 1987 will include riprapping, revegetation, vehicle and pedestrian traffic control, gravel resur facing and other methods of erosion control.			
Southwest Region	$ 170,000	$ 123,000	$ - 47,000
The decrease reflects a reduction of activities on the Rio Grande Project.			

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Missouri Basin Region	$ 430,000	$ 202,000	$ - 228,000
Decrease includes $252,000 for reduced conservation requirements due to completion of planned work at several reservoirs, partially offset by increase of $20,000 for Tiber headcut erosion control, $3,000 increase in salaries, and $1,000 for material and supplies.			
Engineering & Research Center	$ 25,000	$ 25,000	$ --
No change.			
Subtotal-Soil and Moisture Conservation	($ 1,695,000)	($ 1,381,000)	($ - 314,000)
Subtotal - Annual Associated Programs	$13,707,000	$13,359,000	$ - 348,000
Total - Annual Appropriated O&M Activities	$132,665,000	$150,000,000	$+17,335,000

BUREAU OF RECLAMATION
EXPLANATION OF CHANGES IN APPROPRIATION PROGRAM REQUIREMENTS
FROM FY 1986 TO FY 1987

Appropriation Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Permanent O&M Appropriations:			
Arizona - Nevada			
Boulder Canyon Project	$18,850,000	$48,600,000	$+29,750,000

Increase includes $27,478,000 for replacements and additions, $1,546,000 for personnel compensation associated with the assumption of the O&M of the powerplant, $515,000 for extraordinary maintenance; $261,000 for materials and supplies; and miscellaneous expenses. Partially offsetting is a decrease of $50,000 for printing the Hoover Dam folders.

Replacement and addition items in FY 1987 total $38,497,000 and include $33,650,000 for the powerplant uprating program; $1,500,000 for operating agent replacement costs; $500,000 for 460-volt motor control centers; $400,000 for 2,300-volt station service cable; $400,000 to automate the unit greasing sustems; $360,000 for elevator controls; $350,000 to reinforce drum gates; $240,000 for a 125-250 volt direct current battery and charging system; $150,000 for a flowmeter system; $140,000 for unit overhaul and maintenance equipment; $100,000 for needle valve shafts and controls; $100,000 for cooling system eductors; $100,000 for electric shop test equipment; $122,000 for miscellaneous property; $75,000 for general piping; $60,000 for an AC hi pot test set; $50,000 for a penstock jumbo; and $200,000 for transportation equipment, including two sedans (one for law enforcement work), and power and other specialized equipment.

Extraordinary maintenance items total $1,000,000 for relocation of maintenance shops.

TOTAL - PERMANENT APPROPRIATIONS	$18,850,000	$48,600,000	$+29,750,000

BUREAU OF RECLAMATION
EXPLANATION OF CHANGES IN REVENUE PROGRAM REQUIREMENTS
FROM FY 1986 TO FY 1987

Revenue Title: Operation and Maintenance
Note: This program excludes water user advances and other advanced funds.

State and Project	FY 1986	FY 1987	Amount of Change
Revenue O&M Program			
Colorado River Basin Project:			
Arizona-Nevada			
Central Arizona Project	$84,484,000	$84,470,000	$ - 14,000
The decrease includes a reduction in the consumptive use study.			
Colorado			
Miscellaneous Flood Control	$ 13,000	$ 15,000	$ + 2,000
The increase includes increased cost of materials, supplies, and administration.			

Revenue Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
New Mexico-Colorado			
San Juan-Chama	$ 147,000	$ 147,000	$ --
No Change			
Navajo Unit , Navajo Dam	---	$ 6,100,000	$+6,100,000
Utah			
Central Utah - Bonneville Unit	$ 930,000	$ 690,000	$ - 240,000
The decrease is due to completion of start-up costs for new facilities around Strawberry Reservoir $35,000; replacing temporary facilities with permanent facilities $15,000; and completion of extraordinary maintenance item to chip and seal parking lots and entrance road $190,000.			
Central Utah - Jensen Unit	$ 85,000	$ 85,000	$ --
No change.			

Revenue Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Wyoming			
Seedskadee	$ 439,000	$ 306,000	$ - 133,000

The decrease of $133,000 includes $118,000 for replacements and $18,000 for extraordinary maintenance work; offset by an increase of $2,000 for materials and supplies, and $1,000 for recurring operation and maintenance expenses.

Replacements for fiscal year 1987 total $53,000 and includes $20,000 for Supervisory Control equipment; $20,000 for multipoint recorder, and $13,000 for miscellaneous tools and work equipment.

Extraordinary maintenance work in fiscal year 1987 totals $2,000 and is for garage and shop door replacement.

State and Project	FY 1986	FY 1987	Amount of Change
Various States			
Initial Units	$14,448,000	$13,234,000	$-1,214,000

Curecanti, Flaming Gorge, Glen Canyon, and
Navajo Units, Arizona, Utah, New Mexico,
Colorado and Wyoming

The decrease includes $856,000 for replacements, $325,000 for extraordinary maintenance work and $33,000 for regular operation and maintenance expenses. (Decrease of $33,000 for regular O&M includes $105,000 for the amount required for sedimentation studies; offset by an increase of $25,000 for materials and supplies and $47,000 for other recurring O&M.)

Replacements for fiscal year 1987 total $4,707,000 and include $3,490,000 for generator uprating at Blue Mesa, Glen Canyon and Flaming Gorge; $303,000 for Supervisory Control equipment at six locations; $110,000 for turbine runner at Crystal; $295,000 at Curecanti for a tractor, backhoe, transformers, sewage systems and trucks; $126,000 at Flaming Gorge for a compressor, recorder and vehicles; $100,000 at Glen Canyon for a hydraulic lift, and vehicles; $75,000 at Navajo for a grader; and $208,000 for piping, fans, and miscellaneous tools and work equipment.

Revenue Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Extraordinary maintenance work in fiscal year 1987 totals $1,086,000 and includes: $994,000 at Glen Canyon for environmental studies, wicket gate repair, pump repairs, transformer cooling, elevator rebuilding, governor repair and hoist ropes; $45,000 at Navajo for parking lot paving; $27,000 at Blue Mesa for gate intake and turbine repairs; and $20,000 at Morrow Point for painting.			
Examination of Existing Structures	$ 1,070,000	$ 775,000	$ - 295,000
Decrease is due to reduced schedule of field investigations for modification decision analyses.			
Consumptive Use Studies	$ 150,000	$ 150,000	$ --
No change.			
Emergency Funds	$ 500,000	$ 500,000	$ --
No change.			
Land Resources Management	$ 134,000	$ 302,000	$ + 168,000
Increase is for additional land management activities including land use inventory and Land Management records, trespass resolution, right-of-way surveys and records, management plan implementation, and cultural resource activities. Land management activities will continue at 17 locations in Arizona, Colorado, New Mexico, Utah, and Wyoming. New project surveys will begin at one location in Colorado.			

Revenue Title: Operation and Maintenance

State and Project	FY 1986	FY 1987	Amount of Change
Quality of Water Studies	$ 280,000	$ 280,000	$ --
No change.			
Subtotal-Colorado River Storage Project	($18,196,000)	($ 22,584,000)	$+4,388,000
SUBTOTAL-REVENUE O&M PROGRAM	$102,680,000	$107,054,000	$+4,388,000
TOTAL-O&M PROGRAM 1/ (Appropriated, Permanent and Revenues)	$254,195,000	$305,654,000	$+51,459,000

1/ Excludes Water User Funds (FY 1986, $6,982,000; FY 1987, $8,440,000) and Trust Funds (FY 1986, $1,274,000; FY 1987, $1,216,000).

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Operation and Maintenance

Bureau of Reclamation

Program and Financing:	Estimated 1986	Estimated 1987	Increase or decrease (-)
Total direct obligation	$152,837	$157,231	$ 4,394
Funds advanced by water users	-6,173	-7,107	-934
Unobligated balance, start of year	-14,123	-124	$13,999
Unobligated balance, end of year	124	---	-124
Appropriation	$132,665	$150,000	$17,335
Budget Authority:			
Appropriation: Reclamation Fund, Special Fund	$126,165	$147,000	$20,835
General Fund	6,500	3,000	-3,500
Total Budget Authority (appropriation)	$132,665	$150,000	$17,335
Reduction for Public Law 99-177 (Gramm-Rudman)	-5,705	---	-5,705

Object Classification:				
11.0	Personnel compensation	$ 65,147	$ 64,878	$ -269
12.0	Personnel benefits: Civilian	9,359	9,334	-25
13.0	Benefits for former personnel	74	49	-25
21.0	Travel and transportation of persons	1,855	1,750	-105
22.0	Transportation of things	1,694	1,824	130
23.1	Standard level user charges	1,816	1,744	-72
23.2	Rental payments to others	1,164	1,194	30
23.3	Communications, utilities, and miscellaneous charges	1,369	1,381	12
24.0	Printing and reproduction	343	348	5
25.0	Other services	37,658	27,164	-10,494
26.0	Supplies and materials	10,543	11,365	822
31.0	Equipment	12,085	13,517	1,432
32.0	Lands and structures	9,605	22,557	12,952
33.0	Investments and loans	35	39	4
41.0	Grants, subsidies, and contributions	50	50	---
42.0	Insurance claims and indemnities	40	37	-3
99.0	Total direct obligations	$152,837	$157,231	$ 4,394

OPERATION AND MAINTENANCE

Explanation of differences between obligations in U.S. Budget
(Itemization of Estimate) and Budget Justifications
(In Thousands of Dollars)

Items of reconciliation	Obligations 1986	Obligations 1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$152,837	$157,231
Unobligated balance brought forward.	-14,123	-124
Unobligated balance carried forward.	124	---
Water user advances and Trust funds (net).	842	1,333
Applied revenues	102,680	107,054
Hoover Dam expenses, permanent appropriation	18,850	48,600
Prior year funds	31,113	---
Non-Federal Advances	1,274	1,216
Reduction for P.L. 99-177 (Gramm-Rudman)	5,705	---
Appropriated Colorado River Dam Fund (Gramm-Rudman).	811	---
Budget Justifications	287,081	315,310

LOAN PROGRAM

General Statement

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$39,315,000	
Application of Prior Year Funds	17,500,857	
Reduction for Public Law 99-177 (Gramm-Rudman)	-1,691,000	
Proposed FY 1986 Deferral	-7,000,000	
Total Obligations, FY 1986		$48,124,857
Fiscal Year 1987:		
Estimate of Appropriation	$39,941,000	
Application of Prior Year Funds	7,000,000	
Total Obligations, FY 1987		$46,941,000

Authorization: Under Public Law 130, 84th Congress (69 Stat. 244), as amended, the Bureau of Reclamation is authorized to make loans for the construction of irrigation distribution and drainage systems on authorized Federal projects and under Public Law 984, 84th Congress (70 Stat. 1044); as amended, to make loans for the construction, rehabilitation, and betterment of water development projects, both under specific criteria established by the authorizing legislation.

Statement of Loan Subsidy: When the subsidy is equated with the savings to the borrower, i.e., comparing his cost of borrowing from the Federal Government at the 1985 fiscal year rate with the cost of financing the loan in the current private market, the subsidy is about 53 percent. This value is based on the pattern of recent loans that reflect 75 percent for irriation and 25 percent for interest-bearing M&I and hydropower. For individual projects the subsidy will range from near 0 for M&I or power features to 71 percent for irrigation. Federal loans made primarily for M&I or power purposes reflect an interest rate comparable to private market rates, hence the low subsidy. Irrigation loans result in a 71 percent subsidy since, by law, no interest is charged. Under the current law the interest rate is determined each fiscal year by the Secretary of Treasury in accordance with a formula contained in the Act. The rate applicable for fiscal year 1985 was 10-7/8 percent (nontaxed). The private market rates used were a Federal Land Bank rate of 10.38 percent (nontaxed) for irrigation and a municipal bond rate of 9.3 percent. The length of the repayment period is a function of the financial capability of project beneficiaries.

Status: During fiscal year 1986 funding is provided for work to be performed on 15 projects. In addition, funding will be provided for increased construction costs (due to price escalation) and the administration of the loan program. Public Law 84-984 authorized an appropriation ceiling of $600 million for the Small Reclamation Loan Program.

Congress appropriated $39,315,000 for the Loan Program in FY 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce its Loan Program allotments by $1,691,000. A tabulation showing the financial impact as it applies to each loan is shown on the next page.

IMPACT OF THE BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

for the

Loan Program

Project	Enacted BA FY1986*	Application of PL 99-177	Adjusted BA FY 1986
ARIZ AK CHIN FARMS PROJ-EAST	1,091,000	46,913	1,044,087
ARIZ AK CHIN FARMS - PHASE TWO	2,000,000	86,000	1,914,000
ARIZ GILA RIVER FARMS-SUPL	500,000	21,500	478,500
ARIZ ROOSEVELT IRRIG DIST	100,000	4,300	95,700
CAL COLUSA COUNTY WATER DIST	0	0	0
CAL EASTERN MUNICIPAL WD	2,000,000	86,000	1,914,000
CAL ELSINORE VALLEY MWD	500,000	21,500	478,500
CAL OAKDALE IRRIGATION DIST	4,970,000	213,710	4,756,290
CAL RAINBOW MUNIC WATER DIST	3,129,000	134,547	2,994,453
CAL RAMONA MUNIC WATER DIST	1,812,000	77,916	1,734,084
CAL RANCHO CALIFORNIA WD	100,000	4,300	95,700
CAL SANTA ANA WTRSHED ATHRTY	4,000,000	172,000	3,828,000
CAL YUBA COUNTY WATER AGENCY	5,186,000	222,998	4,963,002
COLO AMITY MUTUAL IRRIG COMP	1,682,000	72,326	1,609,674
MONT E BENCH GRAVITY SYST NO.1	2,018,000	86,774	1,931,226
OREG GALESVILLE PROJECT	4,351,000	187,093	4,163,907
TEX DELTA LAKE IRRIG DIST	521,000	22,403	498,597
TEX HIDALGO CO ID NO. 1-SUPL	0	0	0
TEX HIDALGO COUNTY ID NO. 2	2,000,000	86,000	1,914,000
WASH GREATER WENATCHEE ID	1,500,000	64,500	1,435,500
COST/CONTRACT ESCALATION	1,000,000	43,000	957,000
ADMINISTRATION	855,000	36,765	818,235
LOAN PROGRAM	39,315,000	1,691,000	37,624,000

*Figures in this column reflect the assignment of the "Undistributed reduction based on anticipated delays" ($9,681,000) within the Loan Program. Consequently, some projects will show "0" where the assignment of such reductions is equal to the amount approved by Congress.

FISCAL YEAR 1987

Work Proposed

The appropriation estimate of $39,941,000 provides for continuation of work on 16 projects of which 5 projects are scheduled to be completed and for the initiation of 3 loans. The program also provides funding for increased construction costs due to price escalation and continuation of the administration of the loan program. An explanation of ongoing activities and new start work is provided below. The new loans are recommended but will require legislation that amends the Small Reclamation Projects Act to increase the appropriation ceiling and requires repayment of the loans at the current Treasury interest rates plus one-eighth of a percentage point for administrative costs.

CONTINUING LOAN PROGRAM

Ak-Chin Farms Project - Phase 2 - Arizona (Public Law 84-984)

The Ak-Chin Farms Project Phase 2 is located 30 miles southwest of Phoenix in northwestern Pinal County, Arizona. The loan will be used to construct an irrigation system and to develop 6,817 acres of agricultural land on the western portion of the Ak-Chin Indian Reservation. Construction will include 16.4 miles of laterals, 80.6 miles of ditches, 21.8 miles of surface drains and 5.7 miles of floodway protection.

This work will continue in 1987 . . . . $5,188,000 1/

1/ Excludes $629,000 in non-Federal non-cash contribution.

Amity Mutual Irrigation Company - Colorado (Public Law 84-984)

The Amity Mutual Irrigation Company is located along the Arkansas River Valley in Bent, Kiowa and Powers Counties of southeastern Colorado. The irrigation company's diversion, storage, and distribution facilities were constructed at the turn of the century to furnish a supplemental supply of irrigation water to 35,000 acres and are now in need of major rehabilitation. The company plans to replace, restore, and supplement the existing canal structures and to provide improved canal operation and water utilization throughout the distribution system.

The work will be completed in 1987 . . . . $2,541,000 2/

2/ Excludes $536,000 in non-Federal non-cash contribution.

Colusa County Water District - California (Public Law 84-130)

This project is located in southern Colusa and northern Yolo Counties at the base of the Coast Range Mountains. The nearest major city is Sacramento, about 36 miles to the south. Loan funds will be used to construct a pipeline distribution system for delivery of Central Valley Project water from the Tehama-Colusa Canal to 9,952 acres of district land.

The work will be completed in 1987 . . . . $3,467,000 3/

3/ Funded entirely by prior year carryover.

CONTINUING LOAN PROGRAM - (Continued)

Delta Lake Irrigation District - Texas (Supplemental) (Public Law 84-984)

The project is located in the Lower Rio Grande Valley near the city of Raymondville, Texas. The project facilities serve about 69,000 acres. The principal work will include installing concrete pipe and relift pumping plants, rehabilitating pumping plants and canal structures, enlarging and extending drains, and purchasing maintenance equipment.

The work will continue in 1987 . . . . $1,000,000 4/

4/ Excludes $450,000 in non-Federal non-cash contribution.

East Bench Gravity Company - Montana (Public Law 84-984)

The project is located in southwestern Montana in Beaverhead County. The East Bench Gravity Company is a non-profit public corporation formed to develop this project. The 6,300 acres of irrigated land to be serviced by this project are part of the East Bench Irrigation District which operates the Bureau constructed East Bench Unit. The plan will convert the existing open ditch distribution system to buried pipeline. The pipeline system will provide more efficient water use and will produce significant electrical energy savings. The energy savings will be achieved by utilizing the gravity head developed by the pipeline to replace pumps that are now used for pressurizing the existing sprinkler system.

Work will be completed in 1987 . . . . $1,175,000

Eastern Municipal Water District - California (Public Law 84-984)

The project is located in eastern Riverside County, California. The principal work will include constructing 93 miles of pipelines, 11 pumping plants, and 8 connections to the Metropolitan Water District's system and existing storage at Lake Skinner and Perris Reservoir. The project will decrease the present rate of decline of ground-water levels through a ground-water recharge program and provide for future agricultural and domestic water requirements. It is anticipated that over the repayment period, the irrigated acreage will increase from about 65,000 to 92,420 acres, and municipal and industrial requirements will increase from about 31,000 acre-feet to 60,418 acre-feet annually.

Due to increased construction costs, the existing loan does not provide sufficient funds to complete the project. Escalation funds will assure the project completion. Escalation funds will be utilized to complete construction of the final two major feeder systems, remaining transmission pipelines, and booster pumping plants.

This work will continue in 1987 . . . . $1,070,000 5/

5/ Excludes $1,588,700 non-Federal non-cash contribution.

CONTINUING LOAN PROGRAM - (Continued)

Elsinore Valley Irrigation District - California (Public Law 84-984)

The project is located 35 miles south of Riverside, California, in Riverside County. The loan will be used to construct a dike, an outlet channel, and an inlet channel. This project will stabilize Lake Elsinore which has experienced wide fluctuations in surface elevations and will irrigate 5,280 acres of agricultural land and provide 25,000 acre-feet of water for municipal and industrial uses. Modifications to the lake will provide terminal storage of water in the project area.

The work will continue in 1987 . . . . $1,000,000

Gila River Farms Supplemental - Arizona (Public Law 84-984)

The Gila River Farms Supplemental is located 30 miles southeast of Phoenix in northwest Pinal County, Arizona. The loan will be used to construct and rehabilitate portions of the lateral system, replace road crossings and level land. The facilities to be built will serve 3,686 acres with a dependable water supply.

This work will continue in 1987 . . . . $1,537,000 6/

6/ Excludes $166,000 non-Federal non-cash contribution.

Hidalgo County Irrigation District No. 1, Supplemental, Texas (Public Law 84-984)

The project is located in the Lower Rio Grande Valley near the cities of McAllen and Edinburg, Texas. The project facilities will serve 30,565 acres with full service commercial irrigation, 48,775 acres supplemental service, and 5,100 acre-feet per year of M&I water. Project work consists of rehabilitating the intake channel, replacement of the worn-out uneconomical gas engines with six 500-horsepower electric motors, repair of the pumping plant building, repairing the discharge tubes, lining 1.4 miles of main canal, replacing 55 miles of open laterals with pipeline, and purchasing additional operation and maintenance equipment.

The work will continue in 1987 . . . . $3,800,000 7/

7/ Excludes $300,000 in non-Federal non-cash contribution.

Hidalgo County Irrigation District No. 2 - Texas (Public Law 84-984)

The project is located in the Lower Rio Grande Valley in Hidalgo County, Texas. The district will rehabilitate the existing water distribution system which provides irrigation water to 62,700 acres of land and 9,430 acre-feet of water to cities and domestic users. The principal work will include replacement of the river pumping plant and relift pumping plant, replacement of the main canal siphon under the abandoned floodway, and replacement of undersized pipeline and earthen laterals with new pipeline. The loan will also provide for construction of an office building and purchase of maintenance equipment.

The work will continue in 1987 . . . . $2,500,000 8/

8/ Excludes $1,000,000 in non-Federal non-cash contribution.

CONTINUING LOAN PROGRAM - (Continued)

Greater Wenatchee Irrigation District - Washington (Public Law 84-984)

The Greater Wenatchee Irrigation District is located along the Columbia River in central Washington. The loan will enable the District to modify and enlarge the existing irrigation distribution system to serve an additional 2,322 acres. The facilities will include wells, distribution pipelines, relift pumping plants, peaking reservoirs and deer fencing. The State of Washington will contribute $1,137,000 to this program.

The work will continue in 1987 . . . . $2,500,000

Oakdale Irrigation District - California (Public Law 84-984)

This project is located north and south of the Stanislaus River in Eastern Stanislaus County, surrounding the City of Oakdale, California. The district proposes to rehabilitate a great portion of the delivery and conveyance system. The project will result in significantly lower annual maintenance and construction costs while providing a system of water delivery able to guarantee 100 percent of the delivery requirements. No additional land will be brought under irrigation, and no cropping patterns will be changed.

The work will continue in 1987 . . . . $4,100,000 9/

9/ Excludes $505,903 in non-Federal non-cash contribution.

Rainbow Municipal Water District - California (Public Law 84-984)

This project is located in northern San Diego County. The initial and escalation loans will be used to fund construction to augment and enhance the water supply facilities to deliver up to 40,600 acre-feet annually for the irrigation of 15,198 acres and 5,614 acre-feet for municipal and industrial uses. The District was using its design capacity of 22,000 acre-feet annually. The principal work includes construction of a 646-acre-foot reservoir and three steel tanks, expansion of telemetry system, expansion of four pumping stations, addition of one pumping station, and connections to existing conveyance facilities, constuction of the pressure stations, and installation of pipelines.

This work will be completed in 1987 . . . . $4,500,000 10/, 11/

10/ Excludes $65,700 in non-Federal non-cash contribution.

11/ Includes prior year carryover of $1,100,000.

CONTINUING LOAN PROGRAM - (Continued)

Rancho-California Water District - California (Public Law 84-984)

The project is located in southwest Riverside County, California, approximately 60 miles north of San Diego. The proposed project features include: 38 water production wells, 3 recharge basins, 140,000 linear-feet of transmission pipeline, and miscellaneous equipment. This project will stabilize and improve the economy of the area and allow the District to maintain development of lands within the project area. The ground-water recharge basins will aid in water conservation and increase water resources available to irrigate 16,793 acres of agricultural land and provide 11,755 acre-feet of water for municipal and industrial uses. These areas are currently serviced by MWD (Metropolitan Water District). MWD's entitlement to Colorado River water is scheduled to be curtailed when the Central Arizona Project goes into operation.

The work will continue in 1987 . . . . $2,533,000 12/

12/ Includes prior year carryover of $2,433,000.

Santa Ana Watershed Project Authority - California (Public Law 84-984)

The project is located 55 miles east of Los Angeles, California, in the counties of Los Angeles, San Bernardino, Riverside, and Orange. The loan will be used to construct 65,000 feet of gravity pipeline, a 10-million-gallon storage reservoir, 18,300 feet of pressure pipeline, and a pumping station. The project will provide 10,140 acre-feet of water for municipal and industrial uses. These areas are currently served by Colorado River water which is scheduled to curtailed when the Central Arizona Project goes into operation.

The work will continue in 1987 . . . . $8,714,000 13/

13/ Excludes $2,165,800 in non-Federal non-cash contribution.

San Benito Water Conservation and Flood Control District - California (Public Law 84-130)

This project is located in San Benito County. The district plans to construct a pipe distribution system with measuring devices and pumping plants to deliver San Felipe water within the district.

The work will be completed in 1987 . . . . $ 365,000

NEW LOANS PROPOSED FOR THE FISCAL YEAR 1987 BUDGET

Middle Creek Dam Rehabilitation Project - Montana (Public Law 84-984)

The project is located in southwestern Montana in Gallatin County approximately 14 miles south of Bozeman, Montana. The existing dam is owned by the State of Montana and is under the administration of the Montana DNRC (Department of Natural Resources and Conservation). The Middle Creek Water Users Association contracts with DNRC for the storage water. The primary purpose of the dam and reservoir is to store water for irrigation and municipal use. Because the dam is located near Bozeman, the reservoir provides significant recreation opportunities also.

The Corps of Engineers, under Phase 1 investigation, has found the dam cannot pass the PMF (probable maximum flood). In the event of a large flood, the dam would overtop and breach with a considerable potential for loss of life and property destruction.

The modifications to the dam being proposed under the rehabilitation project would allow the dam to safely accommodate the PMF. The construction would include raising the dam embankment, excavating an emergency spillway, and rehabilitating the existing service spillway.

Assuming Congressional action to increase the appropriation ceiling,
the work will begin in 1987 . . . . $ 350,000

San Bernardino County Project - California (Public Law 84-984)

San Bernardino County Project is located 40 miles east-northeast of Los Angeles, California, in the counties of San Bernardino and Riverside. The loan will be used for rehabilitation and construction of three water conservation basins, a spreading ground area, 68,000 linear-feet of concrete-lined flood control channels, a debris retention dam, turnouts, and inlets to the spreading ground. The project will develop new drainage ground-water recharge basins for the purpose of water conservation. This project will improve flood control facilities in the area.

Assuming Congressional action to increase the appropriation ceiling,
the work will begin in 1987 . . . . $1,000,000

United Water Conservation District - California (Public Law 84-984)

This project is located in Ventura County, California. The nearest major city is Ventura, approximately 10 miles northwest of the project. Loan funds will be used to construct a dam, intake canal, and settlement basin to deliver water from the Santa Clara River to 39,150 acres of district land.

Assuming Congressional action to increase the appropriation ceiling,
the work will begin in 1987 . . . . $570,000 [14]

[14] Excludes $826,000 non-Federal noncash contributions.

CONSTRUCTION COST INCREASES (Public Law 94-181)

Cost estimates on the small Reclamation projects usually increase because of rising prices before construction is completed. Funds for this purpose will be available to compensate for increases in construction costs due to price escalation.

The funding will be applied as needed	$1,000,000

ADMINISTRATION OF THE LOAN PROGRAM

This program is used for investigation of potential loans, negotiation of contracts and similar activities. These activities must be performed prior to the granting of a loan and, therefore, require an independent source of financing. Upon execution of a contract for a loan under this program, all costs incurred on the specific proposal to that time, as well as all future costs, will be charged to the organization securing the loan to be repaid as part of the loan. Since the authorizing acts make no provision for the collection of funds spent on unsuccessful applications or on administrative functions now assignable to specific completed loans, a portion of these administrative funds, as well as a portion of all previously appropriated funds for this purpose, is considered nonreimbursable.

The program for fiscal year 1987 will provide for the continuation of the administration of the loan program	$ 840,000
Total Scheduled Program	$ 49,750,000
Undistributed reduction based on anticipated delays	$ -2,809,000
Application of prior year funds	$ -7,000,000
Fiscal year 1987 appropriation estimate	$ 39,941,000

LOAN PROGRAM

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	Public Law	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
COMPLETED LOANS - FULLY FINANCED						
Prior to FY 1986	-	$328,615,403	$328,615,403	$ ---	$ ---	$ ---
FINANCED LOANS - SCHEDULED FOR COMPLETION IN FY 1986						
Ak-Chin - East	84-984	12,241,000	11,150,000	1,091,000	---	---
Buffalo Rapids ID#2	84-984	1,400,000	1,379,965	20,035	---	---
Central Nebraska Public Power and Irrigation District - Phelps System Improvement	84-984	10,350,649	10,321,638	29,011	---	---
Columbia Irrigation District	84-984	2,806,000	2,727,958	78,042	---	---
DeLuz Heights Municipal Water District	84-984	8,287,295	8,287,295	---	---	---
Fallbrook Public Utility District . . .	84-984	12,065,000	12,065,000	---	---	---
Galesville Project	84-984	24,301,000	20,947,499	4,353,501	---	-1,000,000
Garland Canal Power Project	84-984	3,271,354	3,264,354	7,000	---	---
Gila River Farms (Escalation)	84-984	13,887,901	13,887,901	---	---	---
Glide Irrigation District	84-130	5,874,014	2,712,014	3,162,000	---	---
Graham-Curtis Project	84-984	3,863,223	2,080,710	---	---	1/ 1,782,513
Graham-Curtis Project - Supplemental . .	84-984	2,670,000	2,670,000	---	---	---
Hidalgo County ID#1 (Edinburg)	84-984	7,495,913	7,485,913	10,000	---	---
Overland Ditch and Reservoir Company . .	84-984	1,677,000	1,677,000	8,915	---	-8,915
Rainbow Municipal Water District ID#6 .	84-984	2,970,000	2,970,000	---	---	---
Ramona Municipal Water District	84-984	18,919,000	17,107,000	1,812,000	---	---
Roosevelt Irrigation District	84-984	10,515,000	10,415,000	100,000	---	---
Santa Maria Water Control and Improvement District, Cameron County No. 4 - Supplemental	84-984	825,240	808,240	17,000	---	---
Subtotal - Financed Loans		$143,419,589	$131,957,487	$10,688,504	$ ---	$ 773,598

1/ Available grant funds are insufficient to complete the flood control features. A second supplemental grant of $4.1 million has been requested by the companies. It would be ineffective to proceed with work under the irrigation system loan until the second supplemental grant is approved.

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	Public Law	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
CONTINUING LOAN PROGRAM						
Ak-Chin Farms - Phase 2	84-984	$ 13,588,000	$ 2,500,000	$ 2,000,000	$ 5,188,000	$ 3,900,000
Amity Mutual Irrigation Company	84-984	4,223,000	---	1,682,000	2,541,000	---
Colusa County Water District	84-130	8,639,241	1,520,241	3,652,000	3,467,000	---
Delta Lake Irrigation District	84-984	10,982,100	8,956,601	523,000	1,000,000	502,499
East Bench Gravity Company	84-984	3,193,000	---	2,018,000	1,175,000	---
Eastern Municipal Water District	84-984	25,390,000	17,320,000	2,000,000	1,070,000	5,000,000
Elsinore Valley Irrigation District . .	84-984	25,975,000	---	500,000	1,000,000	24,475,000
Gila River Farms - Supplemental	84-984	6,683,000	---	500,000	1,537,000	4,646,000
Greater Wenatchee Irrigation District .	84-984	6,562,000	---	1,500,000	2,500,000	2,562,000
Hidalgo County Irrigation District No. 1 (Supplemental)	84-984	12,972,000	---	---	3,800,000	9,172,000
Hidalgo County Irrigation District No. 2. (San Juan)	84-984	16,100,000	10,368,883	2,054,582	2,500,000	1,176,535
Oakdale Irrigation District	84-984	17,774,000	8,278,958	5,355,853	4,100,000	39,189
Rainbow Municipal Water District	84-984	18,591,000	12,962,000	3,129,000	4,500,000	-2,000,000
Rancho-California Water District	84-984	20,286,000	---	100,000	2,533,000	17,653,000
San Benito County Water Conservation and Flood District	84-130	19,716,000	16,704,000	2,647,000	365,000	---
Santa Ana Watershed Project Authority .	84-984	14,714,000	---	4,000,000	8,714,000	2,000,000
Subtotal - Continuing Loan Program		$225,388,341	$78,610,683	$31,661,435	$ 45,990,000	$69,126,223
NEW LOANS						
Middle Creek Dam Rehabilitation	84-984	$ 3,330,000	$ ---	$ ---	$ 350,000	$ 2,980,000
San Bernardino County Project	84-984	13,420,000	---	---	1,000,000	12,420,000
United Water Connservation District . .	84-984	18,156,300	---	---	570,000	17,586,300
Subtotal - New Loans		$34,906,300	$ ---	$ ---	$ 1,920,000	$32,986,300

GPO 831-380

LOAN PROGRAM - 3

PF-40 (10-78)
Bureau of Reclamation

SCHEDULE OF CONSTRUCTION PROGRAM FISCAL YEAR 1986 AND FISCAL YEAR 1987

PROGRAM ITEM	Public Law	ESTIMATED TOTAL	TOTAL TO SEPTEMBER 30, 1985	FY 1986 PROGRAM	FY 1987 ESTIMATE	BALANCE TO COMPLETE
CONSTRUCTION COST INCREASES	94-181	$ 11,321,756	$ ---	$ 6,321,756	$ 1,000,000	$ 4,000,000
ADMINISTRATION OF THE LOAN PROGRAM		13,338,822	8,027,906	1,144,162	840,000	3,326,754
Subtotal		756,990,211	547,211,479	49,815,857	49,750,000	110,212,875
Reduction for Public Law 99-177		---	---	- 1,691,000	---	1,691,000
TOTAL OBLIGATIONS		$756,990,211	$547,211,479	$48,124,857	$ 49,750,000	$111,903,875
Method of Financing:						
Appropriations available and required		---	---	39,315,000	39,941,000	111,903,875
Unobligated balance carried forward		---	---	-7,000,000	---	---
Application of prior year funds		---	---	17,500,857	7,000,000	---
Underfinancing		---	---	---	2,809,000	---

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Loan Program

Bureau of Reclamation

	Estimated 1986	Estimated 1987	Increase or decrease (-)
Program and Financing:			
Total direct obligation	$ 49,816	$ 45,021	$ -4,795
Unobligated balance available, start of year	-17,501	-7,000	10,501
Unobligated balance available, end of year	+ 7,000	---	-7,000
Proposed legislation	---	1,920	+1,920
Appropriation:	$ 39,315	$ 39,941	$ 626
Reduction for Public Law 99-177 (Gramm-Rudman)	-1,691	---	-1,691
Object Classification:			
11.0 Personnel compensation	$ 824	$ 794	$ -30
12.0 Personnel benefits: Civilian	99	95	-4
21.0 Travel and transportation of persons	59	64	5
22.0 Transportation of things	1	1	---
23.1 Standard level user charges	53	54	1
23.2 Rental payments to others	8	8	---
23.3 Communications, utilities, and rent	4	9	5
24.0 Printing and reproduction	1	1	---
25.0 Other services	426	152	-274
26.0 Supplies and materials	18	19	1
31.0 Equipment	8	18	10
33.0 Investment and loans	48,315	43,806	-4,509
99.0 Total direct obligations	$49,816	$45,021	$ -4,795

LOAN PROGRAM
Explanation of differences between obligations in U.S. Budget
(Itemization of Estimate) and Budget Justifications
(In thousands of Dollars)

Items of reconciliation	Obligations	
	1986	1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$49,816	$45,021
Proposed legislation	---	1,920
Reduction pursuant to Public Law 99-177 (Gramm Rudman) . . .	-1,691	---
Budget Justifications	$48,125	$46,941

EMERGENCY FUND

General Statement

Summarized Financial Data:

Fiscal Year 1986:		
Appropriation	$1,000,000	
Application of Prior Year Funds	44,083	
Reduction for Public Law 99-177 (Gramm-Rudman)	- 43,000	
Total Obligations, Fiscal Year 1986		$1,001,083
Fiscal Year 1987:		
Estimate of Appropriation	$1,000,000	
Total Obligations, Fiscal Year 1987		$1,000,000

Status of Fiscal Year 1985 Emergency Funds: Portions of the fiscal year 1984 unobligated balance were allotted to the Bostwick Park Project, Colorado, for repair of the Cimarron Canal ($138,264); to the Central Valley Project, San Luis Unit, California, to study alternative treatment and disposal of subsurface drainage water in the San Luis drain and Kesterson Reservoir ($205,000); to the Ogden River Project, Utah, for repair or replacement of project works damaged by a landslide ($5,204); and to the Preston Bench Project, Idaho, for repair of the Mink Creek Canal ($23,657). A balance of $372 remained in the Washington office.

The appropriation for fiscal year 1985 was $1,000,000. Of the funds available, $970,000 was allotted to the Central Valley Project, San Luis Unit, California, to study alternative treatment and disposal of subsurface drainage water in the San Luis drain and Kesterson Reservoir, and $30,000 was allotted to the Pick-Sloan Missouri Basin Program, Savage Irrigation District, Savage Unit, to replace the impellers on two 250-horsepower electric motor-driven pumps.

Status of Fiscal Year 1986 Emergency Funds: Portions of the fiscal year 1985 unobligated balance were allotted to the Bostwick Park Project, to complete the repair of the Cimarron Canal ($35,456); to the Ogden River Project, Utah, to complete repairs of project works damaged by a landslide ($599); to the Preston Bench Project, Idaho, to complete repairs of the Mink Creek Canal ($3,102); and to the Pick-Sloan Missouri Basin Program, Savage Irrigation District, Savage Unit, to complete repairs to the two 250-horsepower electric motor-driven pumps ($4,000). A balance of $926 in carryover and the appropriation of $1,000,000 are available for emergencies in FY 1986. Congress appropriated $1,000,000 for the Emergency Program in FY 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce its Emergency Program allotments by $43,000.

Fiscal Year 1987 Program: An appropriation of $1,000,000 will provide a source of funds to meet emergencies as authorized by the Act of June 26, 1948 (Public Law 80-790) and October 1, 1982 (Public Law 97-275). This would ensure continuous operation of all project facilities governed by the Federal Reclamation Law in the event of drought, canal bank, or electrical facility failures, municipal and industrial water system failures, or other unusual or emergency conditions.

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: Emergency Funds

Bureau of Reclamation

	Estimated 1986	Estimated 1987	Increase or decrease (-)
Program and Financing:			
Total direct obligation	$1,045	$1,000	$ -45
Unobligated balance available, start of year	-45	---	45
Appropriation (Reclamation Fund, Special Fund)	1,000	1,000	---
Reduction for Public Law 99-177 (Gramm-Rudman)	-43	---	-43
Object Classification:			
92.0 Undistributed funds available for emergencies	$1,045	$1,000	$-45
99.0 Total direct obligations	$1,045	$1,000	$-45

GENERAL ADMINISTRATIVE EXPENSES

General Statement

Summarized Financial Data:

Appropriation, 1985	$58,917,000
Appropriation, 1986	49,200,000
Reduction for Public Law 99-177 (Gramm-Rudman)	-2,116,000*

Explanation of Increase, FY87 Request Compared to FY86 Appropriation	Increase	
1. Adjustment for increased Bureau role in interagency and foreign activities, management initiatives and related services	$1,000,000	
2. Funding for updating of technical manuals and publications	$1,000,000	
Total Increase	$2,000,000	
Appropriation Request for Fiscal Year 1987		$51,200,000

---

* Congress appropriated $49.2 million for General Administrative Expenses (GAE) in fiscal year 1986. With the passage of the Balanced Budget and Emergency Deficit Control Act (Public Law 99-177), Reclamation will be required to reduce FY 1986 GAE activities by $2,116,000.

General Administrative Expenses

GENERAL JUSTIFICATIONS

The General Administrative Expenses (GAE) appropriation finances the centralized management functions of the Bureau of Reclamation. These functions are designated by law as nonreimbursable. The salaries and related support costs attributable to general administration activities are charged directly to the GAE account. Identification of personnel requirements for execution of these management functions and overhead associated with this program was accomplished by carrying out a formal study of administrative and overhead costs. This led to the determination of a system of accounts for distinguishing costs associated with non-reimbursable management functions from other overhead expenses. The fiscal year 1987 request is based on the results of this continuing identification and review of the cost elements of the program. An itemization of the functional responsibilities of the GAE program begins on the following page.

Responsibility for administering the Reclamation program within a geographic area has been delegated through the organization with executive direction moving from the Commissioner's office in Washington, D.C. to the Engineering and Research Center in Denver, Colorado, and to the regional offices. The costs of the Washington office are financed through this appropriation, while only those costs pertaining to central management activities in the Engineering and Research Center in Denver and the regional offices are charged to GAE. The term "major acquisitions" refers to non-recurring purchases in excess of $50,000 per item (or group of related items) of equipment, large-scale contracts for services, and capital improvements to existing facilities which do not directly benefit any particular project. Several major acquisitions which commenced in prior years and are continuing through FY 1987 are included in the request. As of fiscal year 1987, major acquisitions are included under the Working Capital Fund.

An appropriation of $51,200,000 is requested to finance the GAE program in fiscal year 1987. The appropriation amount is based on estimates of needs for the three main cost elements of the program: (1) $30.6 million for salaries and benefits of personnel in the performance of central management functions, (2) $18.6 million for non-personnel costs of program support, including travel, supplies and materials, GSA rental charges, other rents and utilities, and payments for other services, and (3) $2.0 million for major (over $50,000 per item) acquisitions of equipment, large-scale contracts for services, and capital improvements. This request reflects a 10% administrative expenditure reduction accomplished in fiscal year 1986. For example, significant administrative cost savings will be achieved by consolidating two regional headquarters.

The appropriation request contains a net increase of $2,000,000 over the level appropriated for fiscal year 1986. This results from increased workload associated with the Bureau's participation in interagency working groups involving such tasks as nuclear waste disposal, the EPA Superfund and management initiatives and funding for updating and republication of the Bureau's extensive collection of technical manuals.

ITEMIZATION OF FUNCTIONAL RESPONSIBILITIES OF THE GAE PROGRAM

Program Administration - Involves developing and promulgating the policies controlling all Reclamation activities within prescribed policies, regulations, and procedures. This includes: (1) direction of the work program of the Bureau; (2) determination and establishment of policies, standards, and requirements for performance of the Bureau's programs; (3) review and control of the Bureau's operations; (4) development of supervision methods and objectives of work execution activities; and (5) coordination of the overall phases of the Bureau's administrative, planning, construction, operations, and other activities to ensure adherence at all levels to the Bureau's approved policies, standards, and guidelines.

Budgetary Formulation and Application - Develops procedures for the preparation of estimates and justifications covering funding and personnel required to carry out the Bureau program. As part of a broad program of analysis of priorities and goals, formulates and sets policies and procedures for immediate financing requirements and for long-range planning. Sets policy and oversees implementation of a budgeting system.

Personnel Management - Is responsible for establishing policy and program to ensure management, executive, and staff capability to meet present and future Bureau needs. Sets policy for the training program necessary for updating and maintaining skills for Bureau employees including wage administration and collective bargaining on hourly paid employees. Program and policy development, implementation, and oversight are the main activities performed in this area.

Administrative Policy - Promulgates policy guidance and direction for correspondence, procurement, and property management practices within the Bureau.

Freedom of Information - Involves development and preparation of policy and procedural instructions to facilitate Bureauwide implementation and compliance with the Freedom of Information and Privacy Acts. Interprets, analyzes, and promulgates departmental, Office of Personnel Management, and Office of Management and Budget regulations and directives pertaining to the Acts for Bureau use. Revises and prepares reports as required by the Acts and departmental regulation and documents information through the use of forms, directives, and reports.

Equal Employment Opportunities and Management - Sets the policies and standards to be followed in the Bureau's implementation of the requirements of Title VI of the Civil Rights Act of 1964, section 717 of the Equal Employment Opportunity Act of 1972, Executive Order 11478, the Fair Labor Standards Amendments of 1974 and other applicable civil service rules. Performs review of records to identify areas in need of emphasis related to promotion, recruitment, training, and counseling of minority and women employees, and applicants for employment. Procedures are developed for formulating annual Equal Employment Opportunity Plans and processing complaints of discrimination, including issuance of proposed dispositions and recommendation for corrective action as required by established law and regulation.

Civil Defense Administrative Participation - Sets Bureau policy within requirements of law and Department policy and checks implementation on civil defense preparedness and protection of property and personnel from enemy attack, sabotage, civil disturbance, or malicious damage.

Interagency Initiatives - Provides for support and participation in interagency efforts which cover Bureau activities or where the Bureau's engineering, operational, or administrative leadership can be utilized outside of the Reclamation program.

Official Representation and Liaison Function - Provides for the Commissioner to host dignitaries at official functions, and for official representation of the Bureau at national and international exhibitions directly bearing on the Reclamation program.

Information Reports - Sets policy and implements a review program covering the dissemination of information on developments in irrigation, equipment, methods, etc. Analyzes and initiates studies of special engineering and policy problems as required upon inquiry from members of the Congress, public and private agencies, organizations, and individuals.

Safety of Dams Policy and Administration - Formulates general policy guidelines for the evaluation and oversight of Reclamation's safety of dams program and sets priorities for developing fiscal programs related to structural modification of dams for safety purposes.

Attendance at Meetings of Technical Societies and Professional Groups - Sets policy and advises and assists in implementation with respect to Bureau participation in professional activities. Maintains liaison with engineering societies, consultants, and engineering firms.

Recreation and Fish and Wildlife Administration - Provides direction and policy for preparation, negotiation, execution and supervision of reservoir management agreements on recreation and fish and wildlife aspects of the Reclamation program.

Environmental Policy, Review, and Management - Develops policy and processes for assuring that new construction and modifications to existing facilities conform to environmental standards and for reviewing and evaluating the Bureau's implementation of plans for improving environmental compatibility of existing structures, facilities, land, and waterways under its jurisdiction. Provides review of environmental impact statements which relate to Reclamation activities and which are prepared by other agencies.

Environmental Education - Develops programs to help the public understand the relationships of Bureau construction and operation activities to the natural and manmade environment and for assisting in better decision-making on the part of the public in the management and development of water, power, and land resoruces. Authority for this program is the National Environmental Policy Act of 1969 and the Environmental Education Act of 1970.

Safety Regulation - Policy and administration of the safety program responsibility includes setting standards and reviewing performance in the areas of (1) the adequacy of the construction safety program, (2) the review and inspection of Bureau safety activities for compliance with basic safety requirements by all units, (3) advising and assisting officials at all organizational levels of the Bureau to maintain a vigorous and effective safety program, and (4) establishing and administering policies and procedures relating to safety of employees. Involves incorporation of safety regulations in construction contracts in coordination with Occupational Safety and Health Administration safety requirements.

Development of Technical Publications - Involves updating and preparation of new Bureau manuals, design standards, and publications used in the planning, design, construction, and operation of water resource projects.

Compact Commissions--Meetings and Studies - Involves attendance at compact commission meetings to provide specialized knowledge as requested and carrying out studies that may be required by the commission.

Legal Matters and General Meetings Requiring Bureau Participation - Involves attendance of Bureau personnel as required by the Department when appropriate for Bureau participation in witness selection or defining the Bureau position on controversial issues. Collaborates with Solicitor in preparing and/or reviewing legislation affecting water resources development.

Interagency Activities - Provides for liaison with pertinent Federal, State, university, and research foundation staffs. Review and comment on reports of other agencies on proposed developments by those agencies in the water resource field, such as watershed work plans of the Department of Agriculture and planning reports of the Corps of Engineers.

Administration of Foreign Activities Work - Develops policies, programs, and procedures for participation by the Bureau in development of new initiatives, programs review and evaluation of ongoing or completed programs to assure international technology transfer, and maximize participation of private sector interests. The international resource development programs are conducted on a reimbursable basis.

Preparation of Bulletins, Operators' Instructions, and Cost Information Reports - Preparation and dissemination of publications covering operation and maintenance procedures for municipal and industrial water, power, and irrigation facilities. Instruction materials are prepared for operation and maintenance training sessions and cost information reports for general use in the field of operation and maintenance of the Bureau's power and irrigation facilities.

Management Review of Water User Operated Projects - Includes development of irrigation policies, objectives, and standards for the review and inspection of operation and maintenance of Bureau facilities transferred to water users.

Power Repayment Study Reviews - Review for conformance to policy and sound economic analysis the studies leading to determining the amount of revenues needed to operate power facilities and recover investment expenditures on power projects.

Water Project Repayment Contract Policy Reviews - Provides for indepth policy and management review of contracts to assure compliance with sound business practices and applicable laws and regulations.

Gaging Station and Meteorological Programs Coordination - Development of river regulation policies, standards, and procedures for river regulation operations, including sedimentation, erosion, and other control problems when not related to a specific project.

Data Collection and Publications - Provides for summarizing and analyzing materials for use in publications. Includes review and analysis prior to publication of materials such as annual reports, the roster of irrigation districts, crop report and related data, accomplishments reports, tax analysis, and special reports.

Land Administration - Provides for general policy direction for administration of lands under the jurisdiction of the Bureau. Responsibility for administration of anti-speculative and acreage limitation provisions of law has been transferred to the Reclamation Reform program, financed by the Operation and Maintenance appropriation.

940

GENERAL ADMINISTRATIVE EXPENSES

Summary of Activities

ACTIVITIES	FY 1986 Appropriation	FY 1987 Request	1987 Compared to 1986
Washington Office and Engineering and Research Center	$28,799,000	$30,789,000	$+1,990,000
Reduction for Public Law 99-177	-1,239,000	---	+1,239,000
Regional Offices	20,401,000	20,411,000	+10,000
Reduction for Public Law 99-177	-877,000	---	+877,000
Total	$47,084,000	$51,200,000	$+4,116,000

ORGANIZATIONAL RESPONSIBILITIES

Responsibility for administering the Reclamation program within a geographic area has been delegated through the organization with managerial direction moving from the Commissioner's office in Washington, D.C. to the Engineering and Research Center in Denver, Colorado and the regional offices.

The total permanent full-time equivalent work years general administrative staff level for 1987 is 840 of which 239 are in Washington, D.C. 210 in the Denver Engineering and Research Center, and the remainder in the regional offices.

Commissioner's Office in Washington, D.C., and offices at the Engineering and Research Center, Denver Colorado:

	1985 Appropriation	1986 Appropriation	1987 Request
Washington Office and E&R Center Activities........................	$37,007,000	$28,799,000*	$30,789,000

The Commissioner's office is located in Washington, D.C. All ongoing water, land, power, and youth conservation programs of the Bureau receive their overall policy and executive direction from this office. This office also supervises and coordinates Bureau administrative activities, including budget and financial management, contracting and procurement, property management, personnel, organization, general office administration, and interagency assignments where this responsibility is retained by the headquarters offices.

The Engineering and Research Center, located in Denver, Colorado, serves as the central engineering and research office for the Bureau of Reclamation. The principal function of this office is to provide expertise in the engineering and research fields for all Bureau regional and project offices in the 17 Western States. This office also provides technical services for the General Investigations, Construction, Operation and Maintenance, and Loan Programs, policy guidance in safety activities and data processing. It also provides assistance to other Federal agencies, State and local governments, foreign governments, and non-Federal interests. These functions require a permanent staff of personnel with specialized technical and managerial skills to serve the various offices within the Bureau as well as those outside the Bureau. Additionally, this office carries the primary responsibility of administering and formulating policy for the Safety of Dams Program.

The General Administrative Expenses activities at the Engineering and Research Center and the Washington Office will also provide fiscal year 1987 funding for procurement of major equipment items to be used Bureauwide. This includes $2.0 million towards completion of the replacement of the central computer system and implementation of office automation.

* Reduction for P.L. 99-177 is $1,239,000.

The major portion of the expense required to maintain the Engineering and Research Center in Denver, Colorado, is incurred in rendering direct technical assistance and services to field offices, projects, and activities and is not financed by the General Administrative Expenses appropriation. In fiscal year 1987 as heretofore, these services will be financed by funds from projects or activites. The major portion of such funds will come from the Construction Program, although some funds will come from the Operation and Maintenance, General Investigations, and other appropriations. The funds are transferred for the planning, design, laboratory work, and related activites which the Engineering and Research Center in Denver will be required to perform directly for each project or activity, based on authorized, approved, and funded projects and activities.

Reclamation construction often is on a scale which requires the engineering design work to extend over a period of years. The activities of the Denver office, therefore, do not relate directly to the construction program in the field for any given fiscal year. Design work precedes the construction by a year or more. Year-to-year increases or decreases in the Bureau's field programs and the changes in the Denver office requirements do not necessarily coincide in any given year.

Regional Offices

	1985 Appropriation	1986 Appropriation	1987 Request
Regional Office Activities..	$21,910,000	$20,401,000*	$20,411,000

The General Administrative Expenses requirement in the regional offices during 1987 is estimated at $20,411,000. The GAE activities at the regional level involve administration of the Reclamation program within the several regions.

In addition to the normal management responsibilities of the regional offices, there are certain types of work such as program coordination, accounting, procurement, and other general support services required by and of direct benefit to all projects and activities which are performed more efficiently on a centralized basis and charged directly to the projects. Where circumstances permit and to avoid duplication of office staffs, the Bureau detaches appropriate portions of project organizations and centralized them at the regional level for the performance of such work. By this procedure, the Bureau can supply the skilled services required in the various technical fields at lesser costs to the several projects or activities within the region. In fiscal year 1987, this work is contemplated to be provided through the Working Capital Fund, since the centralized project activity work is performed for the direct benefit of individual projects. Such work will be financed through payments to the Working Capital Fund by those projects from their activity allotments. The obligations for the work are included in the schedules of the projects receiving the services.

* Reduction for P.L. 99-177 is $877,000

ITEMIZATION OF ESTIMATE
(In Thousands of Dollars)

Department of the Interior
Appropriation Title: General Administrative Expenses

Bureau of Reclamation

	Estimated 1986	Estimated 1987	Increase or decrease (-)
Program and Financing:			
Total direct obligation	$ 65,318	$ 51,225	$ -14,093
Unobligated balance available, start of year	-16,143	-25	16,118
Unobligated balance available, end of year	25	---	-25
Appropriation:	$ 49,200	$ 51,200	$ + 2,000
Reduction for Public Law 99-177	-2,116	---	+ 2,116
Object Classification:			
11.0 Personnel compensation.	$ 26,959	$ 26,543	$ -416
12.0 Personnel benefits: Civilian	4,098	4,035	-63
21.0 Travel and transportation of persons.	1,828	1,738	-90
22.0 Transportation of things.	230	230	---
23.0 Rent, communications, and utilities	4,635	4,811	176
24.0 Printing and reproduction	396	385	-11
25.0 Other services.	11,260	10,473	-787
26.0 Supplies and materials.	971	990	19
31.0 Equipment	14,921	2,000	-12,921
41.0 Grants, subsidies, and contributions.	20	20	---
99.0 Total direct obligations.	$ 65,318	$ 51,225	$ -14,093

GENERAL ADMINISTRATIVE EXPENSES

Explanation of differences between obligations in U.S. Budget
(Itemization of Estimate) and Budget Justifications
(In Thousands of Dollars)

Items of reconciliation	Obligations 1986	Obligations 1987
Itemization of estimate (total direct obligations on budget Program and Financing Statement)	$65,318	$51,225
Budget Justifications	$65,318	$51,225

WORKING CAPITAL FUND

General Statement

Summarized Financial Data:

Fiscal Year 1986:	
Obligations	23,223,000
Revenues	23,223,000
Appropriation	---
Fiscal Year 1987:	
Obligations	59,623,000
Revenues	53,223,000
Appropriation Request	6,400,000

WORKING CAPITAL FUND

The Working Capital Fund (WCF) was established in December 1985 pursuant to authorizing language included in the Fiscal Year 1986 Appropriation Act. Ongoing activities in support of all Bureau programs and projects and for other agencies will be brought under the WCF. The fund will provide a more efficient and equitable means of financing services, supplies and equipment provided to beneficiaries. Initial WCF activities include centralized computer services, the bureau's core sampling and drilling program, and development and maintenance of construction/engineering training modules.

The WCF is intended to operate within its own resources, through charges to beneficiaries for reimbursement of direct costs. The fund will also enable the Bureau to accumulate funds for replacement of assets from charges for depreciation. In the early years, acquisition of new assets or replacement of obsolete ones may require appropriations because depreciation charges were not accumulated on existing assets in the past. In fiscal year 1987, $6.4 million is requested to continue acquisition of a Computer Aided Design and Drafting System (CADDS) to be used Bureauwide, bringing state-of-the-art technology to the engineering and design functions.

PERMANENT APPROPRIATIONS

General Statement

Summarized Financial Data:

Fiscal year 1986:		
Appropriation	$350,000	
Reduction for Public Law 99-177 (Gramm-Rudman)	-15,000	
Total Obligations, FY 1986		$335,000
Fiscal Year 1987:		
Estimate of Appropriation	$350,000	
Total Obligations, FY 1987		$350,000

Operation, Maintenance, and Replacement of project works, North Platte Project, $30,000. - This fund is derived from operation of project powerplants, leasing of project grazing and farm lands, sale or use of townsites, and sale or rental of surplus water (66 Stat. 755, Sec. 4).

Payment to Farmers' Irrigation District (North Platte Project, Nebraska-Wyoming), $8,000. - Payments are made to Farmers' Irrigation District on behalf of the Northport Irrigation District for water carriage (62 Stat. 273, as amended).

Payments to local units, Klamath Reclamation Area, $250,000. - Certain revenues collected for the leasing of Klamath Project reserved Federal lands within the boundaries of certain national wildlife refuges shall be used (a) to credit or pay the Tule Lake Irrigation District amounts already committed and (b) to make annual payments to the counties in which such refuges are located (78 Stat. 850).

Refunds and Returns, $62,000. - Overcollections are refunded and unapplied deposits are returned (64 Stat. 689).

Colorado River Dam Fund
Boulder Canyon Project

Summarized Financial Data:

Fiscal year 1986:		
Total Estimated Obligations		$27,350,000 1/
Budget Authority	20,850,000	
Unobligated balance transferred	6,500,000	
Reduction for Public Law 99-177 (Gramm-Rudman)		-897,000
Fiscal Year 1987:		
Total Estimated Obligations		$53,600,000 1/
Budget Authority	52,913,000	
Prior Year Funds	687,000	

Colorado River Dam Fund, Boulder Canyon Project:

Payment of interest on advances from the Treasury, $900,000. - Interest is paid to the Treasury on funds advanced from construction (43 U.S.C. 618a(b)).

Payment to States of Arizona and Nevada, $600,000. - Annual payments of $300,000 each are made to Arizona and Nevada from operation of the Boulder Canyon Project, as provided by law (43 U.S.C. 618a(c)).

Transfer to the Colorado River Development Fund, $500,000. - Annual transfers are made to the Colorado River Development Fund from revenues received in the Colorado River Dam Fund, to be used for the investigation and construction of projects leading to formulation of a comprehensive plan for the utilization of water of the Colorado River system for irrigation, electrical power, and other purposes.

Uprating and Betterment, $33,650,000 1/. - The uprating of generators will continue. Eventually, the total nameplate capacity of the powerplant will increased from 1,528.8 to 2,078.8 megawatts.

Operation and Maintenance, $14,950,000 1/. - Beginning in 1987, the Bureau will assume responsibility for the operation and maintenance of the powerplant. In addition to this, other work involves tearing down and repairing broken generating units, installing normal replacement equipment such as pumps, motors, and electrical items, guiding visitors through the dam and operating a visitors' center, and maintaining security of the dam and associated facilities.

Spillway Modifications, $3,000,000 1/. - The spillway tunnel modifications will complete the repair of areas of the tunnels damaged by the high flows in 1983 and will complete the installation of air slots in the tunnels to minimize any future flood damage.

1/ Operation and Maintenance activities ($25,350,000 in FY 1986 and $51,600,000 in FY 1987) are also shown under the Operation and Maintenance Appropriation section.

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

CONSTRUCTION PROGRAM

Deletion of a specific amount to be considered as though advanced to the Colorado River Dam Fund for the Boulder Canyon Project and insertion of ... "such amounts as may be necessary" ....

Elimination of a specific amount provides the flexibility needed to provide for unanticipated program changes.

Insertion of provision for use of non-Federal contributions in the Construction Program.

This provision is added to clarify the use of non-Federal contributions in the Construction Program appropriation. With increased emphasis on cost sharing, funding of bureau projects will contain more and more non-Federal contributions. The Bureau has existing authority to use non-Federal contributions as stated in the Contributed Funds Act of 1922, 43 U.S.C. 395.

Deletion of provision pertaining to the execution of a supplemental repayment contract for the Bonneville Unit of the Central Utah Project.

This provision contained in the fiscal year 1986 appropriation act has been eliminated. The supplemental repayment contract has been executed and was sent to Congress on December 12, 1985, for a 100 day review period.

Deletion of provision for use of $14 million in unobligated balances of Teton Dam Failure Payment of Claims funds.

This provision has been eliminated because the $14 million was obligated early in fiscal year 1986.

Deletion of provision pertaining to the construction of the Garrison Diversion Unit.

The language contained in the fiscal year 1986 appropriation act which restricted construction of the Garrison Diversion Unit pending enactment of legislation prior to March 31, 1986, to reformulate the unit has been eliminated. The fiscal year 1986 and 1987 programs have been curtailed to ongoing contracts that have been awarded prior to October 1, 1985 and for project shut down activities.

Legislation (S.1785) is currently before the Congress to amend the Garrison Diversion Unit by authorizing the Garrison Diversion Unit Commission's recommendations.

If legislation is enacted by the Congress the Bureau plans to seek supplemental funding for continuation of the project.

Deletion of language for the rehabilitation and betterment program for the Twin Falls Canal Company, Twin Falls County, Idaho.

No funds have been programmed in fiscal year 1987 for the Twin Falls Canal Company.

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

GENERAL INVESTIGATIONS

Insertion of provision for use of non-Federal contributions in the General Investigations program.

This provision is added to clarify the use of non-Federal contributions in the General Investigations appropriation. With increased emphasis on cost sharing, funding of Bureau projects will contain more and more non-Federal contributions. The Bureau has existing authority to use non-Federal contributions as stated in the Contributed Funds Act of 1922, 43 U.S.C. 395.

950

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

GENERAL ADMINISTRATIVE EXPENSES

Change of "seven" regions of the Bureau of Reclamation to "six".

The Upper Missouri Region and the Lower Missouri Region have been consolidated into one region, the Missouri Basin Region, effective on December 22, 1985.

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

SPECIAL FUNDS

Deletion of Colorado River Dam Fund and its statutory reference

The purpose of the Special Funds language is to identify the various funds referred to elsewhere in the appropriation act by citing the dates and the U.S. code references. The Colorado River Dam Fund and its statutory reference is being removed from this language since the Colorado River Dam Fund is now a separate reporting entity.

WEDNESDAY, MARCH 5, 1986.

TENNESSEE VALLEY AUTHORITY

WITNESSES

C. H. DEAN, JR., CHAIRMAN

JOHN B. WATERS, DIRECTOR

W. F. WILLIS, GENERAL MANAGER

B. J. BOND, MANAGER OF NATURAL RESOURCES AND ECONOMIC DEVELOPMENT

L. H. EDWARDS, MANAGER OF PLANNING AND BUDGET

H. S. SANGER, JR., GENERAL COUNSEL

J. T. SHIELDS, MANAGER OF AGRICULTURAL AND CHEMICAL DEVELOPMENT

J. G. STEWART, MANAGER OF CORPORATE ADMINISTRATION AND PLANNING

R. C. STEFFY, JR., MANAGER OF POWER

J. R. DURALL, ASSISTANT MANAGER OF POWER

ELIZABETH THACH, MANAGER, LAND BETWEEN THE LAKES

Mr. BEVILL. The committee will come to order.

Mr. Chairman, we are pleased to have each of you here again, and we are looking forward to hearing your testimony. I understand that you have a statement covering the administration's budget for 1987, and I believe the committee asked that you prepare to submit some additional material that describes TVA's proposed efforts based on your original OMB request. I know you have complied with that request, and I assume your presentation this morning will highlight these additional activities. You may proceed as you wish.

Mr. DEAN. Thank you, Mr. Chairman. You are correct. In accordance with your wishes we have those two statements. I would like to tell you who is up here with me. On my left is Herb Sanger, who is General Counsel for the TVA. On my right, right behind me, coming down the hall, is John Waters, Director. He is on his way. Sitting next is Bill Willis, the General Manager; and Larry Edwards is Manager of Planning and Budget who helps us keep track of these types of things.

Mr. BEVILL. Glad to have each of you with us.

Mr. DEAN. We have several other people with us that we could call on if we need to.

Mr. Chairman, I am here to outline the President's budget request for TVA of $58,038,000 for fiscal year 1987. This year's budget program provides for sharply reduced levels of activities.

In fiscal year 1987, the administration requests $26,893,000 for natural resource programs to fund the following activities:

The request for 1987 for reservoir system operations is $20.6 million.

A request for $3.5 million is included for water resources. This will support a continuation of some of TVA's ongoing work in water quality monitoring and cleanup in its reservoirs and tributary streams.

A $550,000 request is made for land and forest resources in order to allow TVA to continue managing the water levels in wetlands adjacent to its mainstream reservoirs.

Resource management and development support funds will continue TVA's work producing maps of the valley region, as part of the USGS National Mapping Program, and activities that ensure TVA compliance with federal and state environmental management regulations. The request for this work is $2.25 million.

The administration requests $20,635,000 in fiscal 1987 for TVA's National Fertilizer Development Program. This includes a request of $10.43 million for fertilizer research and development and $10.2 million for fertilizer technology development.

The request for capital investment funds for 1987 totals $9.843 million. Included in the request are $2.6 million in appropriated funding for dam safety modifications, and $4.4 million for chemical plant modifications.

The request for general facilities is $1.333 million in 1987.

We also would like to inform the subcommittee about our power program which, of course, is not financed with appropriations.

TVA's power program has performed well in most areas during the past year, although our nuclear program has experienced major and widely publicized reversals. The availability and efficiency of our fossil fuel plants have been outstanding, and we have been able to meet all power demands of the region, despite the loss of our nuclear generation, without major problems. Our hydroelectric plants, although performing well, experienced a significant drop in production last year because of the most severe drought on record in the Tennessee Valley.

Electric rates remained virtually unchanged for three years in a row, before rising a relatively modest 6.9 percent at the beginning of the current fiscal year.

A negative note in our power program last year concerned our nuclear plants. There we experienced persistent safety-related and management problems that resulted in the board's decision to shut down our two operating plants and delay our licensing request on a third plant until these problems are fully identified and resolved.

It is impossible to project at this time when these problems will be resolved and the plants can be returned to service. But the board has taken bold action to correct the problems and get TVA's nuclear program back to the leadership position it once enjoyed in the industry. The board has brought in retired Admiral Steven A. White, who has had many years of experience in the nuclear Navy, and delegated to him the authority and responsibility to find and fix the chronic problems that have brought our nuclear program to a halt.

Despite the problems with our nuclear program, the TVA power system is continuing to serve a valuable national demonstration role in the areas of conservation, energy management, research and demonstration, and environmental protection.

Conservation programs in the TVA region show potential for reducing electricity consumption by 11.6 billion kilowatt-hours by the year 2005. TVA has reached its fiscal year 1985 goal for solar water heaters with nearly 1,600 installations. Since the beginning of TVA's conservation program, 935,000 consumers have received free energy surveys; more than 500,000 homes have been weatherized under TVA's energy conservation program.

A significant milestone was reached last September in TVA's cooperative program to test and demonstrate advanced technologies that can help the electric power industry improve its performance and meet future demands in economical and environmentally acceptable ways. Leaders in the nation's electric power industry, in government, and in the transportation and coal industries joined TVA at our Shawnee Steam Plant near Paducah, Kentucky, to break ground for the nation's first full-scale test of the atmospheric fluidized bed combustion process for burning coal to generate electricity.

The process, which has been tested in a smaller pilot plant at Shawnee, promises a cleaner and more efficient way to use the nation's plentiful high-sulfur coal supply in electric power plants. TVA's successful tests of ways to improve the dissolved oxygen levels in releases from large hydroelectric dams are attracting the attention of dam operators across the country, while TVA's cooperative work on the causes and effects of acid rain also is producing nationwide interest.

[The justifications appear at the end of this hearing.]

Mr. **Dean**. In response to your request, Mr. Chairman, I have some remarks concerning the budget request which you asked me to make.

As this graph shows, that Mr. Long has there in his hand, the TVA appropriated budget has been reduced by one-third between 1980 and the current fiscal year.

For fiscal 1987, the administration is proposing a 47 percent reduction from the already reduced level of 1986. This would represent a cut of 51 percent in just two years.

Some of this cut represents completion of capital projects. Increasingly, however, programs and services are being cut.

The first chart you see here depicts TVA's 1986 appropriations. The second chart shows the administration's budget request.

The second chart is incomplete—it is significantly less than a whole pie.

Mr. **Bevill**. I gather from that that you can keep your fertilizer development program operating?

Mr. **Dean**. The fertilizer development program, yes, sir, is somewhat intact.

Completely missing are programs in economic development and agricultural development. The remaining slices are much smaller.

TVA programs in economic and agricultural development have been successful at creating private-sector jobs and increasing incomes in the region.

The map of the Tennessee Valley Region on display illustrates the need for jobs in many areas. It shows that 41 counties—20 percent of the total—have unemployment rates more than double the national average. The red is double the national average for unemployment. They are scattered throughout the system that we serve. Virtually half of all 201 counties in the region have double-digit unemployment rates. So the need is there.

TVA's economic development programs are aimed primarily at the 50 most economically depressed of these rural counties. They feature help for exisitng industries, and advanced training programs. Each of these programs has been replicated outside the valley region.

Our agricultural development programs are designed to increase income opportunities on the family farm, a problem of national significance.

These are investments in opportunity—opportunity for jobs and for earned income. And we hope these programs can continue for the good of our region and for the good of our nation.

In our region, income from federal transfer payments amounts to 17 percent of the valley's total personal income. These transfer payments are a direct contributor to the federal deficit which concerns us all.

Federal budget savings resulting from cuts in TVA's job and income-producing programs might well have to be spent on increased payments for unemployment compensation, welfare, and food stamps.

Natural resource research and demonstration projects with potentially significant national benefits would also be lost. These projects address such national problems as groundwater protection, toxic air emissions, hazardous waste management, soil erosion control, and floodplain management.

Under the current budget request, TVA would have to close some 100 public recreation sites located on TVA lands around its reservoirs. These sites get heavy public use, and their closing would directly impact large numbers of people both in the region and the nation, because people come to the Great Lakes of the south for their vacation and recreation. For instance, the 170,000-acre Land Between the Lakes project would have to be closed.

LBL is far more than a local or regional outdoor recreation and camping area. It is a national demonstration in innovative public management of natural resources.

TVA's National Fertilizer Development Center, as the name implies, is a national program with an international reputation. It is the nation's, and the world's, foremost center for fertilizer research.

It is clearly in the national interest to keep these programs going, programs that have contributed to the production of three-fourths of all fertilizers produced in America.

Without congressional support, TVA's long-standing cooperative program to improve agriculture in the Tennessee Valley, to raise farm incomes, to preserve the soil and water, and to provide an opportunity for small and low-income farmers would also be lost.

Research that is already showing major promise for economically converting farm refuse and hardwood wastes—biomass it is called—into synthetic fuels also would come to an end.

In a nutshell, Mr. Chairman, two of the major purposes for which TVA was established—integrated regional development and national demonstration—are in jeopardy.

These are programs that are receiving national attention. For example:

TVA's Existing Industries Program is being copied and applied in the States of Minnesota, Oregon, California, and North Carolina, among others;

New Jersey's Camden County College is learning from a TVA-sponsored skills training program at Chattanooga State Technical College to establish an automated manufacturing training center;

A TVA program to help small farmers in western North Carolina stay in business by introducing such high-value crops as tomatoes, ornamental shrubbery, and even Christmas trees, is being replicated throughout the eastern United States; and

The planned use of floodplain lands, pioneered by TVA more than 25 years ago, has become a national model.

Finally, let me summarize by emphasizing three points:

1. TVA represents a national experiment in the management of natural resources;

2. TVA's economic development programs create permanent, private sector jobs and are built on the basis of local initiative and local participation; and

3. TVA's programs in both natural resources and economic development complement and supplement, but do not duplicate, programs of other federal and state agencies.

In the final analysis, we have to measure carefully the budget actions we take today against the impact they will have tomorrow. We believe a prudent investment in the successful national experiment that is TVA makes good sense.

[The information follows:]

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

WORKING CAPITAL FUND

Addition of language to provide for an appropriation to the Working Capital Fund.

Section 205 of the General Provisions for the fiscal year 1986 Energy and Water Development Appropriation Act establishes a Working Capital Fund. As authorized, the fund is intended to operate within its own resources through charges to beneficiaries for reimbursement of direct costs. Fund revenues will include charges for depreciation of assets transferred to the fund to provide for asset replacement and additions. However, revenues in the early years will be insufficient to finance acquisition of new assets or replacement of obsolete ones because depreciation charges have not been accummulated on existing assets in the past. It will take some time before newly imposed depreciation charges build up to a sufficient level to finance major acquisition needs. Therefore, we are requesting an appropriation of $6.4 million to acquire a bureauwide computer aided design and drafting system (CADDS) through the Working Capital Fund.

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

ADMINISTRATIVE PROVISIONS

Deletion of provision for purchase of aircraft.

The Bureau does not plan to purchase any aircraft during fiscal year 1987.

Deletion of language pertaining to renovation of Building No. 53 to accommodate the new central computer facilities at the Denver Federal Center, Lakewood, Colorado.

No additional funds have been programmed for the renovation of Building No. 53 in fiscal year 1987.

Insertion of language to provide for the reallocation of project benefits for the Seedskadee Project.

This language will provide the authority needed to reallocate the costs of the Seedskadee Project. Because of the changes in project functions for the Seedskadee Project, especially with regard to increased power and municipal and industrial water, it has been determined that it is beneficial to the United States to reallocate the costs among these various project purposes. Public Law 95-91, dated August 4, 1977 (91 Stat. 578), states that Congressional approval must be obtained for the reallocation to occur. Including the new language in our Administrative Provisions for fiscal year 1987 will comply with this requirement.

BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

ADMINISTRATIVE PROVISIONS

Insertion of Language Pertaining to Purchase of Motor Vehicles

Purchase authority is requested for a total of 12 passenger-carrying vehicles in fiscal year 1987. Ten units qualify for replacement because they meet the criteria expressed in FPMR 101-38.9 (6 years or 60,000 miles for sedans and stations wagons). These vehicles (approximately 10 percent of the passenger-carrying fleet) will be needed for the upgrading of our present fleet.

As depicted in the following table, the Bureau motor vehicle fleet will remain fairly stable.

	Automobiles	Station Wagons	Buses	Trucks	All Types
Fiscal Year	Number	Number	Number	Number	Total Passenger-Carrying and Trucks
1985	85	17	1	1789	1,892
1986 estimated	86	17	1	1818	1,922
1987 estimated	87	18	1	1848	1,954

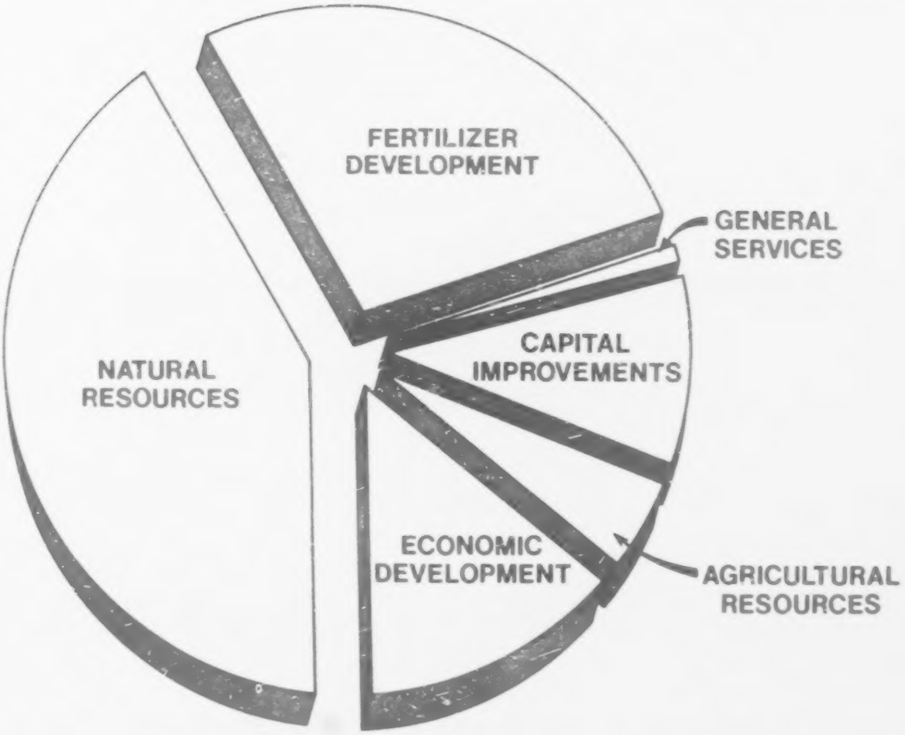
BUREAU OF RECLAMATION

Explanation of Changes in Language, Fiscal Year 1987

General Provisions

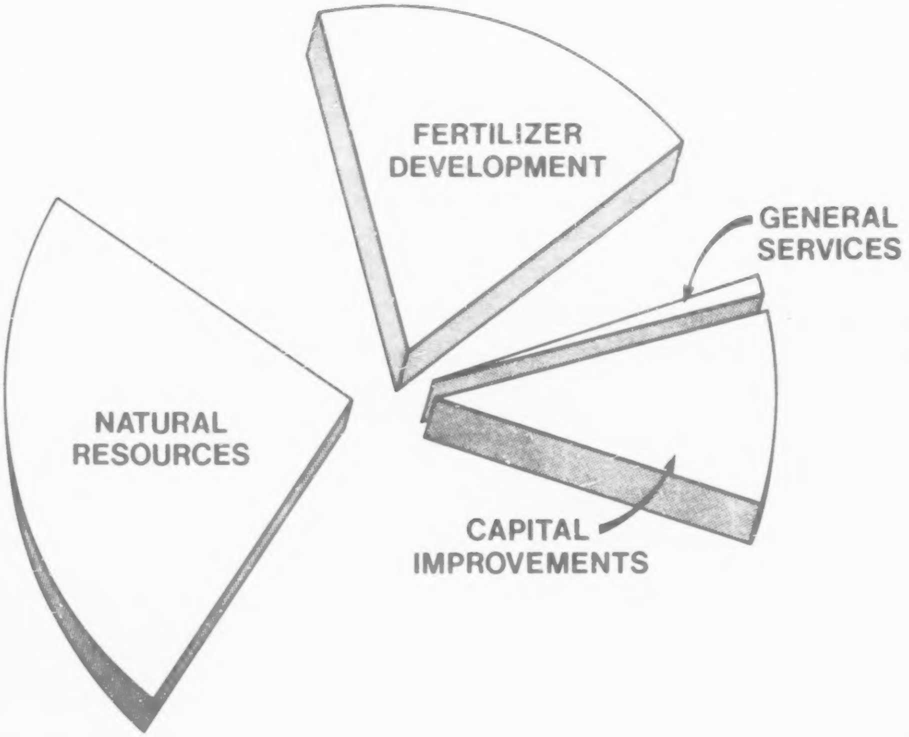
Deletion of language which established a Working Capital Fund for the Bureau of Reclamation.

Section 205 of the General Provisions contained in Public Law 99-141, the Energy and Water Development Appropriation Act for fiscal year 1986, established a Working Capital Fund for the Bureau of Reclamation. The language contained in P.L. 99-141 is of a permanent nature and therefore need not be repeated.



1986

APPROPRIATION



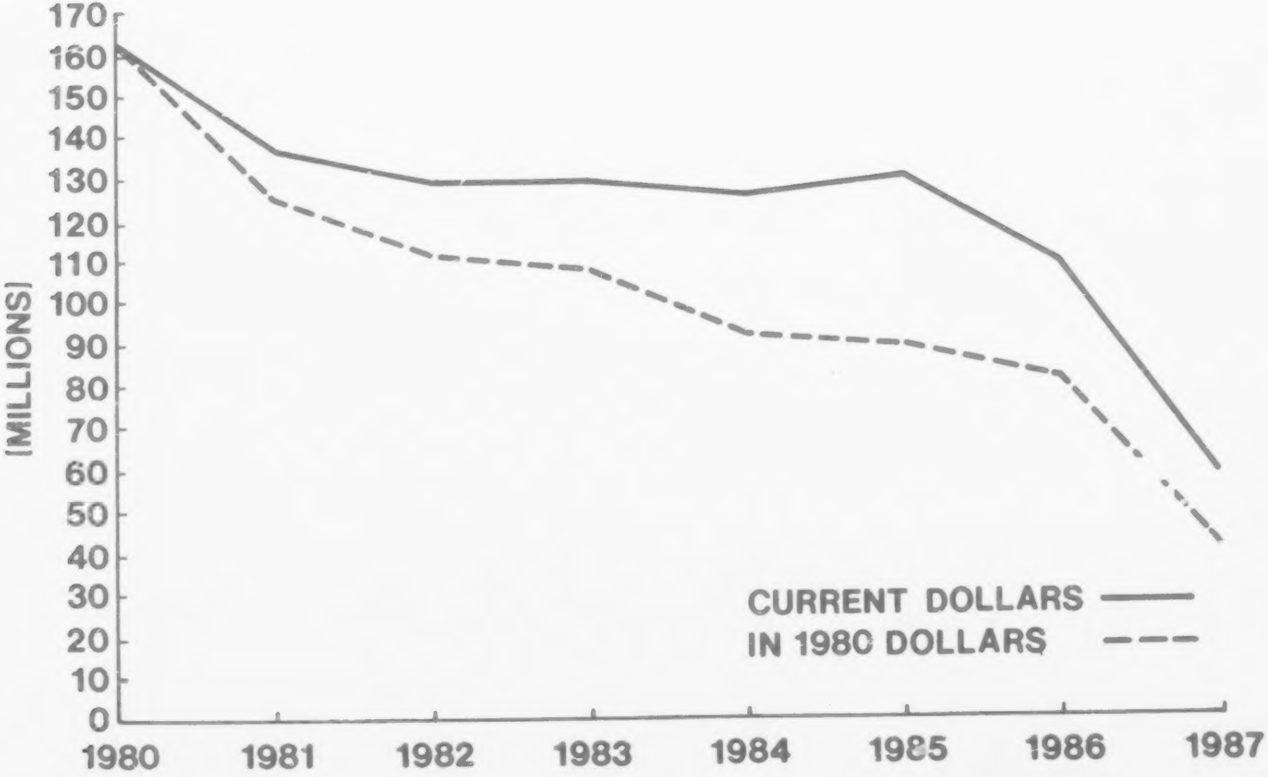
1987
PROPOSED

Mr. **Dean**. For the past several years the distinguished ranking Member from Indiana, Mr. Myers, has asked us for a consolidated balance sheet that sets forth TVA's finances including both appropriated and power funds. This year we have prepared such a balance sheet in advance. We are pleased to offer it for inclusion in the hearing record, if that be the wish of the committee

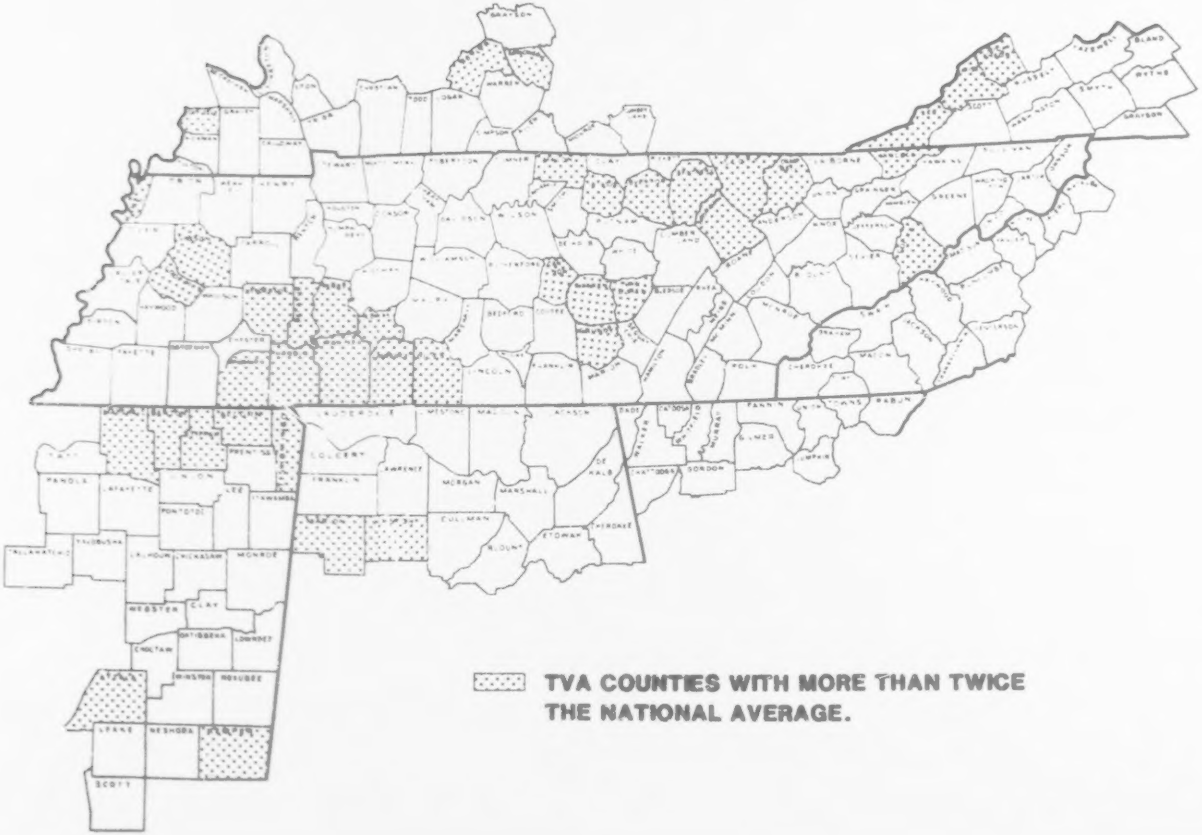
Mr. **Bevill**. It will be made a part of the record.

[The information follows:]

TVA APPROPRIATIONS



UNEMPLOYMENT


GRAYSON
TAZEWELL
BLAND
WYTHE
RUSSELL
SMYTH
SCOTT
WASHINGTON
GRAYSON
CHRISTIAN
TODD
LOGAN
WARREN
SIMPSON
CALLOWAY
HENRY
CARROLL
OBION
DYER
TIPTON
HAYWOOD
MADISON
CHESTER
SHELBY
FAYETTE
WILSON
DE KALB
PUTNAM
WHITE
CUMBERLAND
ANDERSON
UNION
GREENE
SEVIER
KNOX
BLOUNT
ROANE
MONROE
BEDFORD
COFFEE
LINCOLN
FRANKLIN
MARION
HAMILTON
BRADLEY
POLK
CHEROKEE
GRAHAM
SWAIN
JACKSON
MACON
CLAY
HENDERSON
TOWNS
RABUN
FANNIN
GILMER
LUMPKIN
DADE
WALKER
CATOOSA
WHITFIELD
MURRAY
CHATTOOGA
GORDON
LAUDERDALE
LIMESTONE
MADISON
JACKSON
DE KALB
COLBERT
FRANKLIN
LAWRENCE
MORGAN
MARSHALL
CULLMAN
BLOUNT
ETOWAH
CHEROKEE
TATE
PANOLA
LAFAYETTE
UNION
PRENTISS
LEE
ITAWAMBA
PONTOTOC
TALLAHATCHIE
YALOBUSHA
CALHOUN
CHICKASAW
MONROE
WEBSTER
CLAY
OKTIBBEHA
LOWNDES
CHOCTAW
WINSTON
NOXUBEE
LEAKE
NESHOBA
SCOTT

▨ **TVA COUNTIES WITH MORE THAN TWICE THE NATIONAL AVERAGE.**

TENNESSEE VALLEY AUTHORITY
STATEMENTS OF FINANCIAL CONDITION
SEPTEMBER 30, 1985, 1986, AND 1987
(In thousands of dollars)

	1985 Actual			1986 Estimate			1987 Estimate		
Assets	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total
Fund balance with Treasury	136,864	114,563	251,427	885	78,357	79,242	2,985	26,295	29,280
Accounts receivable--net	481,285	14,843	496,128	481,285	14,843	496,128	481,285	14,843	496,128
Inventories	565,024	16,529	581,553	541,923	16,529	558,452	556,923	16,529	573,452
Bond retirement and decommissioning funds	328,504		328,504	526,788		526,788	723,450		723,450
Real property and equipment--net	16,848,466	1,147,184	17,995,650	17,861,323	1,161,507	19,022,830	18,723,302	1,160,545	19,883,847
Loans and long-term receivables	287,748	42,265	330,013	287,148	42,265	329,413	284,748	42,265	327,013
Deferred charges:									
Unamortized investment in canceled nuclear units	2,627,608		2,627,608	2,412,172		2,412,172	2,185,172		2,185,172
Other deferred charges	257,536		257,536	273,482		273,482	294,917		294,917
Total assets	21,533,035	1,335,384	22,868,419	22,385,006	1,313,501	23,698,507	23,252,782	1,260,477	24,513,259

TENNESSEE VALLEY AUTHORITY
STATEMENTS OF FINANCIAL CONDITION (Continued)
SEPTEMBER 30, 1985, 1986, AND 1987
(In thousands of dollars)

	1985 Actual			1986 Estimate			1987 Estimate		
Liabilities and Government Equity	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total
Accounts payable and accrued liabilities	785,972	81,017	866,989	934,178	82,166	1,016,344	969,165	29,565	998,730
Debt issued under borrowing authority:									
Borrowings from the public............	1,725,000		1,725,000	1,625,000		1,625,000	1,580,000		1,580,000
Borrowings from Federal Financing Bank..............................	14,381,000		14,381,000	14,731,000		14,731,000	15,308,000		15,308,000
Borrowings from Treasury..............	150,000		150,000	150,000		150,000	150,000		150,000
Unamortized discount and premium--net...	-3,796		-3,796	-3,420		-3,420	-3,044		-3,044
Capital lease obligations...............	1,697,207		1,697,207	1,697,207		1,697,207	1,478,207		1,478,207
Decommissioning of nuclear plants and reclamation of coal properties.........	83,078		83,078	110,078		110,078	140,078		140,078
Accruals for canceled nuclear units.....	56,045		56,045	56,045		56,045	29,358		29,358
Total liabilities.................	18,874,506	81,017	18,955,523	19,300,088	82,166	19,382,254	19,651,764	29,565	19,681,329

Mr. Dean. That is the end of my remarks at this time, Mr. Chairman.

Mr. Bevill. Does anyone else wish to make a statement? Mr. Waters.

Mr. Waters. Thank you very much, Mr. Chairman. I don't have a prepared statement, but certainly it is my privilege to be before this committee and the chairman and Mr. Myers. I appreciate your attention to TVA's problems. I feel like I am an eyewitness to TVA, even though I have only been on the board a short time.

I am a product of the fine work that TVA has done with the help of this committee over the many years that has dramatically affected the quality of my life, and has allowed me to prosper and raise my family and educate my family. I appreciate it, because I was born and reared in a part of the valley that saw the need, saw what TVA did to our needs and the accomplishments and conservation and flood control and resource development all through my part of east Tennessee.

People who live along the rivers know the wisdom of that old saying that you can't step twice into the same stream, because the current always rushes on. We know that truth is relevant today for not only TVA but for our nation. TVA is very sensitive to the fact that this time of change has come, and that we must change. TVA must change to meet today's problems.

Even though we are very, very proud of what we meant to the valley in the past, that is not enough to continue to come to this committee and ask for our continued support, so we are sharing the nation's effort to reduce the federal deficit. We are confronted with cuts that have taken one-third of the agency's appropriated budget since the start of the eighties. We just simply haven't made across-the-board reductions in TVA. We carefully evaluated our programs. We found ways to continue to do those things which we have expertise in and which are needed, which are not being duplicated, and just quite frankly apply the test: Can TVA do this better than anybody else and do we still need to do it?

I think we have taken the initiative in forming partnerships with others in state, local and other federal agencies that are addressing these problems. The staff has worked hard to put together a program which we feel we can come before this committee with and in fairness and sincerity and in an effort to continue to do the work that so desperately needs to be done, to ask this committee for your continued support.

I am happy to be here, Mr. Chairman, and we will answer any questions that you or the committee might have.

Mr. Bevill. Do any others have any statements?

Of course, Mr. Myers and I and this committee realize that this has probably been the most difficult year that TWA has had. You have had nuclear problems. You have had the budget problems. You have had to face that, and you have even had to face the proposal to sell the TVA. I think the word is privitization; it that it?

Mr. Dean. That is what they say.

Mr. Bevill. Of course that is not going to happen. It would take an act of Cogress and it won't be in any act of Congress, selling the TVA but the other two are problems that you have to deal with. Considering all of this, Mr. Chairman, do you think that the TVA can regain the stature and prestige that it once had? You know that TVA has a mighty good 50-year record, and it has been copied by other countries, and many sections of this country have looked upon it with admiration and respect because of what it has accomplished.

My question to you is do you think you can regain this position?

Mr. DEAN. Yes, sir, Mr. Chairman. We have to accept the fact that the very nature of the system we live in is to emphasize things that go wrong. At TVA we have had, as I mentioned earlier, and everybody knows, we have had considerable problems with our nuclear generation. However, we must keep in mind that the nuclear capacity, the licensed capacity of our nuclear plants now represents about one-sixth of the TVA power system. There has never been any threat to the power supply in the valley, and we of course have taken rather drastic actions to try to get our nuclear program back on track.

I say this because we have the reputation, for instance, in this country of operating the best coal-fired systems. We are pioneers, and our people are still called on in other parts of the world to come and help design hydro systems.

We operate a resource development program that is the envy of the other people who are doing the same thing. We are pioneers in many scientific developments, such as the fluidized bed combuster that I mentioned earlier. We are the leaders in getting that project started, and it is a cooperative effort with private power and Electric Power Research Institute and others.

What I am saying is that in many areas we have not lost any prestige, and in the areas where we feel like we have lost it, we are making efforts to get it back.

I feel that in visiting around considerably in the valley, that most people in the area we serve still have a very warm feeling for TVA, and I see no reason why this should not continue.

Mr. BEVILL. Would you like to comment on that also, Mr. Waters?

Mr. WATERS. Well, I certainly agree with everything the chairman has said. We recognize, I certainly recognize as a member of the board, that in this day and time a lot of our systems of government are under attack. The judiciary is under attack, the legislative branches, the executive branches of government, state, local, city, federal—all of us. And unless we can convince the public that we are doing a good job, a job that needs to be done, we will probably not be allowed to continue that job, and we at TVA face that issue very squarely.

We are willing to go by that test. We are willing to be tested by that measure. I think we can make a case for the continued support of TVA and that indeed where some of our prestige has been lost, TVA was the great builder, but we are out of the building phase now. We must learn to operate efficiently, be an efficient, lean operation. Many forms of government have to make that test, so we are not alone, but we are willing to be tested and judged on that basis, and I think we will regain the confidence of the public that we have lost.

Mr. BEVILL. Mr. Chairman, you mentioned that nuclear power now, I believe you said, represents about one-sixth of your power?

Mr. **Dean**. The licensed plants represent roughly one-sixth of our generating capacity.

Mr. **Bevill**. My question is, how has the lack of nuclear power affected your power program?

Mr. **Dean**. We have been fortunate. It has not affected us as much as one might have thought it would, because we have been fortunate. Everybody knows about all the problems we have operating nuclear power plants. The advantage of nuclear power, the reason people started building the plants to begin with, is the fact that the fuel is relatively inexpensive, and we expected some supply problems when the nuclear plants were shut down.

However, we have been able to purchase—and I say we have not had a real good hydro year—but we have been able to purchase some economic blocks of power in cold weather from neighboring systems, which have actually kept us from operating some of our less efficient coal-fired plants. We have had the capacity, but the thing you don't want to do is operate your least efficient coal-fired plants, and you don't want to operate your gas- and oil-fired turbines if you can avoid it.

With coal prices having stabilized and dropped somewhat, which has helped us in our operation of the coal-fired system, the effects on our power system have not been as drastic as one might have thought they would be. We will not adjust rates during this fiscal year, which in some years in the historical past rates have had to be changed even during the fiscal year. We can see our way clear to the end of this fiscal year, which ends September 30, without any rate adjustment.

If we have a shortfall because of the lack of nuclear generation, a shortfall on money, it will reduce the coverage we like to have. We like to have 110 percent of our interest charges in income, but that could be reduced. That could be the primary effect this year. Next year's rates, the design of next year's rates, will be tied to how much nuclear generation we can expect, and it is too early to say right now what that will be.

Mr. **Bevill**. When you raise your rates, I always refer my constituents to the other committees with responsibility for that.

Mr. **Dean**. That is nice of you, sir, because most of them refer them to Dean.

Mr. **Bevill**. When will the TVA begin and finish bringing the nuclear plants back on the line?

Mr. **Dean**. This same day next week, I guess Tuesday of next week.

Mr. **Bevill**. That is mighty quick.

Mr. **Dean**. Quickly? Let me finish, sir. This time next week Mr. Steve White, our Manager of Nuclear Power, is going to report to the NRC, not necessarily the dates he plans to start, but what he and his team have found in a detailed inspection of our nuclear system. He will report what has to be done as specifically as possible at the various plants to get them in shape to run, and in case of Watts Bar, to get them in shape to license.

We have learned you might say more or less the hard way not to throw dates out until we are more sure of them, so we can't give you any dates, sir.

Mr. **Bevill**. The 1986 Energy and Water Development Appropriation Act contained a provision requiring that certain high-voltage electrical equipment be purchased under what we call the "Buy American" criteria. What has TVA done to implement this statutory provision, and what has the experience been with it?

Mr. **Dean**. We have complied, and with the chairman's permission I will let Mr. Sanger expand on that.

Herb, would you like to talk to that?

Mr. **Sanger**. Our purchasing staff has been given directions by the board that it is to comply with the statute as passed, and with the explanation that is contained in the report that explains what EHV equipment constitutes. Our purchasing people have adopted contract provisions that provide that we will evaluate bids by that criteria. So we are following the law that the Congress has passed.

Mr. **Willis**. The first bids which would apply to that will be opened on the 11th of March.

Mr. **Bevill**. I would like you to supply copies of those contracts to the Committee so we will have the information.

Mr. **Sanger**. We will be happy to do that.

Mr. **Bevill**. What has been the reaction among the TVA employees to the creation of an Office of Inspector General? And what has he done so far?

Mr. **Dean**. We meet on a weekly basis with the Inspector General for the purpose of having him report to us about his activities. Initially, his reports consisted of the efforts he is making in the process of building up his staff. However, he has already started conducting some investigations, and he is getting inquiries and comments and complaints or whatever from employees. He is, exactly as planned, serving as a place that employees can go and refer their problems, comments, suspicions, whatever, and it would be entirely separate from the regular line organization. He will conduct the investigations and file reports with, of course, the names of the people involved removed.

Ideally, employee complaints are handled in the line organization, but there always needs to be some safety valve outside of the line organization, where people can go and say their thing, and this is what he has set up. He is a very professional and competent individual, and he is putting together a good staff to do the things that he is supposed to do.

Mr. **Bevill**. Does he have the authority to report directly to Congress?

Mr. **Dean**. As far as I know.

Mr. **Waters**. Yes.

Mr. **Dean**. In the——

Mr. **Bevill**. In the contract.

Mr. **Dean**. What I am trying to say, the resolution.

Mr. **Waters**. We created this office, he is directed to report to the board and the Congress, and he will be making reports to you through the appropriate committee.

Mr. **Bevill**. We feel that he can be an asset to the TVA, and we are looking forward to hearing him, and certainly this committee is going to be available to him for any reports of anything that he wants to recommend or anything he finds, and we intend to support him.

Mr. **Waters**. Thank you very much.

I think the TVA employees are supportive. Of course, there are some who felt it was not necessary, that investigations were being handled, but I think that we realize that by having a more independent approach made, it gives us credibility, and people are recognizing that as an improvement. He told me just the day before yesterday that he was getting excellent cooperation. He visited with all the office managers, been to Muscle Shoals, Chattanooga, had been around and was getting excellent cooperation and felt real good about his initial work.

Mr. **Dean**. He was particularly complimentary of Mr. Sanger and his people who have maintained files over a period of years, and they are all in good shape and available to Mr. Zigrossi; if he needs them.

Mr. **Bevill**. Most of the reductions in TVA's budget have occurred in the so-called economic development activities, as you know. I would like for you to describe TVA's economic development programs, and the rationale for them and the impact of them in the region, the impact of this budget reduction.

Mr. **Dean**. We find in the region we serve that we have, as you noticed from that map, areas that need help. There are two or three ways you can help people. You can give them a goal, which doesn't encourage them particularly to go to work. You can suggest that they move to Seattle, if Boeing just got a new contract, which doesn't sit too well with people who have deep roots in rural areas, and people who really are not qualified, not mobile. They are not part of a mobile work force. Or you can try to help bring jobs into the areas where jobs are needed. There are various ways of doing this.

The TVA way has centered on two major programs. One we call the existing industries program, in which TVA working with the local power distributor, which buys power from us, but that is independent otherwise, working with the local power distributor we have gone in and helped existing industries in expansion programs. There have been several thousand jobs created through this program. We do not do detailed engineering work, but we show them how they can manage energy. We show them other things that can be done to help them with their expansion. And as I say, the existing industries program has resulted in several thousand jobs.

Another program we have is concentrated on the 50 counties that are by far the worst off in the 201 counties we serve. It is called Special Opportunities Counties and Cities Program, and in that case we go in—last year we had a little over $5 million available for that program. By working with existing agencies, and other cooperators, whether they be local government agencies, industries, banks, whatever, that money was leveraged into about $20 million of investment, which created jobs, and resulted in thousands of jobs in the valley area that wouldn't be there otherwise. So those are the types of things that we are doing in economic development.

The object is private-sector jobs. It is not to put anybody on the dole or even on the federal payroll. The object is private-sector jobs.

Mr. **Bevill**. You described a while ago in your opening statement that the fertilizer plant has national benefits and also an international reputation. The program has had international benefits too, hasn't it?

Mr. **Dean**. Those patents that have been designed by the TVA scientists in Muscle Shoals have been used all over the world.

Mr. **Bevill**. I know when I went over to Vietnam that Auburn graduates were all over South Vietnam during the Vietnam war. I went over and visited our American and Alabama troops particularly, all over South Vietnam.

I remember everywhere I would go I would see an Auburn University graduate out there, it seemed, teaching them how to make three crops a year with that fertilizer you developed at TVA, instead of one. That is probably the most effective foreign aid program this country or any country has ever had, because it is much better, in the old saying, it is better to teach a person how to fish than to just give him fish.

Mr. **Dean**. We agree.

Mr. **Bevill**. I am very concerned about what kind of an impact these budget cuts are goiing to have on the fertilizer plant. Are you going to have to dismiss people or are people going to lose their jobs?

Mr. **Dean**. Mr. Willis said he would like to comment on it.

Mr. **Willis**. I would like to comment. It cuts about $15 million out of $35 million requested. The things that we would lose would be most of our valley agriculture programs, valley resources working with the farmers and farmers' co-ops in the region to get higher yield crops, more technology developed into the marketplace, for getting those crops to the market, working with the farmers on new techniques to get cash crops on which they can survive in today's environment in the farm crisis.

All of our valley agriculture, all of our work with conservation of soils that we have been so successful with over the last years, we would lose that. We have been making a lot of progress on that, working with a lot of other federal agencies and county folks and state folks and private farmers over the last two years in making significant headway, that would be lost and that would be a terrible loss to the valley agriculture.

As far as national programs, we would have to cut back a great deal on our research, on particularly trying to find ways to benefit the beneficiation program for dealing with the very low percentage of phosphates that we have. We have low-quality phosphates left in the country, and we have got to find a way to beneficiate it, and we have got to find a way to use that low phosphate in this country because we don't have that product left in this country.

We lost that research capability; we lost a lot of nitrogen research. We cut back our research program a good bit, and we are of course struggling to try to work with the agricultural industry to find more ways to participate in the program.

But this larger cutback would be a fairly significant impact on our ability to work with the farm community in the region, and it would also hamper us a great deal to do the things that the fertilizer industry and the nation asked us to do, in looking ahead and making sure that we have the right nutrient research going on for the problems we are going to be facing in the future. So it does hit us a heavy lick to be able to meet that role that we have been so successful in in the last several years.

Mr. **Dean**. It is important to emphasize that the fertilizer industry is very supportive of the TVA program. If they weren't, the program would have fallen apart a long time ago. The industry realizes it needs the kind of research TVA does, and supports it.

Mr. **Willis**. I think it is about 150 direct jobs at TVA that would be lost in the national fertilizer program.

Mr. **Bevill**. In just the one program?

Mr. **Willis**. Yes, sir.

Mr. **Bevill**. Let's just assume for a minute that this committee and the Congress gives you exactly what you have asked for and what the administration has asked for; what would be the impact on people in the TVA area?

Mr. **Dean**. We have about 700 people that we would have to lay off at TVA. We also feel that jobs would not be created because TVA is vanishing from the economic development scene. In other words, there would be some 30,000 or 40,000 jobs that we feel we could be instrumental in helping create that we would not be able to work on. In other words, there would be direct and indirect effects.

Mr. **Bevill**. Would you provide for the record a little more detail on that?

Mr. **Dean**. Certainly.

[The information follows:]

Estimated Job Impact to Proposed TVA Budget Cuts

The employment impact of the funding reductions proposed for TVA in the Administration's recently budget has several components:

1. *The direct loss of jobs by TVA employees.*—These are the reductions associated with loss of funds in the natural resources, economic development, fertilizer, and agricultural development programs. These employees are enumerated in table 1.

2. *The indirect loss of jobs in the regional economy in which TVA employees lose their jobs.*—The number of indirect jobs in the general economy associated with direct TVA jobs is difficult to estimate without a detailed study. Previous studies, however, suggest that in the TVA region approximately 1.6 jobs are created through "multiplier" effects for each direct job. Using this as a working assumption, the number of "Indirect Jobs" lost is summarized in table 2.

3. *Jobs not created because of the elimination of TVA programs.*—This category can be further divided into:

a. Jobs to which TVA involvement is a major determinant.
b. Jobs created by TVA in partnership with other organization.
c. Jobs created by activities in which TVA played a largely supporting role.

The employment associated with these categories of activity are displayed in table 3. Two example programs illustrating the differences between the "major" and "partner" classifications are attached as an appendix.

4. *Indirect jobs associated with program-related employment.*—These jobs, displayed in table 4, have been estimated using the same formula as in table 2.

TABLE 1.—ESTIMATED TVA EMPLOYMENT REDUCTION BY CONGRESSIONAL DISTRICT

Congressional District		Number 1987	Principal location 1986–92
Kentucky	1	1206	Land Between The Lakes (LBL).
Tennessee	2	177	Knoxville, Athens.
	3	171	Anderson County, Cleveland, and Chattanooga.
	4	6	Morristown.
	5	18	Nashville.
	8	19	LBL, Paris.

TABLE 1.—ESTIMATED TVA EMPLOYMENT REDUCTION BY CONGRESSIONAL DISTRICT—Continued

Congressional District		Number 1987	Principal location 1986–92
Mississippi	1	([1])	
	2	([1])	
	3	([1])	
Alabama	4	186	Muscle Shoals.[1]
	5		
North Carolina	11	2	Asheville.
Unallocated		24	
Totals		709	

[1] Muscle Shoals includes Mississippi and Tennessee residents.

TABLE 2.—ESTIMATED "INDIRECT JOBS" ASSOCIATED WITH REDUCTION IN TVA EMPLOYMENT

Congressional District		Number 1987	Principal location 1986–92
Kentucky	1	170	Land Between The Lakes (LBL).
Tennessee	2	283	Knoxville, Athens.
	3	274	Anderson County, Cleveland, and Chattanooga.
	4	10	Morristown.
	5	29	Nashville.
	8	30	LBL, Paris.
Mississippi	1	( )	
	2	([1])	
	3	([1])	
Alabama	4	298	Muscle Shoals.[1]
	5		
North Carolina	11	3	Asheville.
Unallocated		+38	
Totals		1,135	

[1] Muscle Shoals includes Mississippi and Tennessee residents.

TABLE 3.—JOBS CREATED BY TVA-SUPPORTED PROGRAMS

Congressional District	1987				1987–92			
	Major	Partner	Some	Total	Major	Partner	Some	Total
Tennessee	222	7,869	185	8,276	1,304	47,202	950	49,456
Mississippi	183	2,755	50	2,988	816	16,753	400	17,969
Alabama	10	1,537		1,547	120	9,252	100	9,472
Georgia	11	607		618	86	3,782	40	3,908
North Carolina	37	774	20	831	192	4,652	60	4,904
Virginia	5	215		220	30	1,355		1,385
Kentucky	32	1,563		1,595	192	9,426		9,618
Total	500	15,320	255	16,075	2,740	92,422	1,550	96,712

Table 4.—Estimated indirect jobs created by TVA—supported programs

Congressional District:	*Number*
Tennessee	13,242
Mississippi	4,781
Alabama	2,475
Georgia	989
North Carolina	1,330
Virginia	352

Kentucky	2,552
Total	25,721

APPENDIX I.—PARTNERSHIP EXAMPLE, SPECIAL OPPORTUNITIES CITIES AND COUNTIES, 1985 CONGRESSIONAL DISTRICT 1, TALLAHATCHIE COUNTY, MS

Industrial Retention—Charleston Industries—Project funding

SOCC	$100,000
Local (Industrial Revenue Bonds)	225,000
State (CDBG)	75,000
Private	400,000
Total project cost	800,000

Jobs retained—50.

APPENDIX II.—MAJOR CONTRIBUTOR EXAMPLE, EXISTING INDUSTRIES PROGRAM, 1985, CONGRESSIONAL DISTRICT 2, FRANKLIN COUNTY MS

TVA Contribution—$9,000.

Employees Training and Hired—20.

Requirements and process of EIP training program:

1. The potential new employee is first certified as being out of work and is processed through normal State Employment Security procedures.
2. The employer (EIP client) then completes a simple workplan and budget for new employee participant.
3. The employer agrees to offer on the job training for the new employee for a period of not less than eight weeks and then retain the new employee for an additional four weeks (three months total).
4. If at the end of the required training period the employer is satisfied with the new employees performance, the manufacturing firm submits an invoice for reimbursement at a rate of $450 per new employee hired under the training program.

Mr. **BEVILL**. And by each program, how many people would be laid off? What would be the impact in the way of the benefits?

Mr. **DEAN**. Reduced services.

Mr. **BEVILL**. The reduced services, reduced benefits that flow from these programs, and particularly employment, because as you have shown here, you have already got a pretty high rate of unemployment in the TVA area, and so we would like to get detailed comments on the impact that this will have.

Mr. **DEAN**. Yes, sir.

Mr. **BEVILL**. The chair will at this time recognize Mr. Myers.

Mr. **MYERS**. Thank you, Mr. Chairman and gentlemen, thank you for your appearance here today, and including something as an old country banker I can see a little bit better. However, I still find it difficult to ascertain and to dig out here what is appropriated and what is paid out of your regular revenues and expenses. I guess it is all here if I have the time to go through it and dig that out. Do you treat on your books your appropriated funds separately from revenue from generation?

Mr. **DEAN**. Yes, sir, they have to be kept separate.

Mr. **MYERS**. By law, is that right?

Mr. **DEAN**. Yes, sir. The power people contract with certain other parts of TVA, but that money comes from the power revenues. For instance, the environmental staff, as a good example, does work for the power people in such things as the temperature of the water that is discharged from power plants.

These guys are experts in fishlife and all that kind of thing, and they would do that type of work on contract from power. Appropriated money cannot get into the power system. In fact, the money

TENNESSEE VALLEY AUTHORITY
STATEMENTS OF FINANCIAL CONDITION (Continued)
SEPTEMBER 30, 1985, 1986, AND 1987
(In thousands of dollars)

Liabilities and Government Equity	1985 Actual Power Program	1985 Actual Nonpower Programs	1985 Actual Total	1986 Estimate Power Program	1986 Estimate Nonpower Programs	1986 Estimate Total	1987 Estimate Power Program	1987 Estimate Nonpower Programs	1987 Estimate Total
GOVERNMENT EQUITY									
Unexpended budget authority:									
Unobligated balance..................		25,203	25,203		3,997	3,997		4,536	4,536
Undelivered orders[1]................	232,157	23,186	255,343	215,848	7,037	222,885	200,141	7,037	207,178
Unfinanced budget authority:									
Borrowing authority..................	-399,980		-399,980	-667,856		-667,856	-685,036		-685,036
Invested capital......................	2,826,352	1,205,978	4,032,330	3,536,926	1,220,301	4,757,227	4,085,913	1,219,339	5,305,252
Total government equity.........	2,658,529	1,254,367	3,912,896	3,084,918	1,231,335	4,316,253	3,601,018	1,230,912	4,831,930
Total liabilities and government equity..............	21,533,035	1,335,384	22,868,419	22,385,006	1,313,501	23,698,507	23,252,782	1,260,477	24,513,259

---

[1] Not included in these figures are the following undelivered orders (in thousands of dollars):

	1985 Actual	1986 Estimate	1987 Estimate
Coal.....................	5,223,513	5,223,513	5,223,513
Nuclear fuel............	2,472,424	2,472,424	2,472,424
Total...............	7,695,937	7,695,937	7,695,937

TENNESSEE VALLEY AUTHORITY
ANALYSIS OF CHANGES IN GOVERNMENT EQUITY
FISCAL YEARS 1985, 1986, AND 1987
(In thousands of dollars)

	1985 Actual			1986 Estimate			1987 Estimate		
	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total	Power Program	Nonpower Programs	Total
PAID-IN CAPITAL									
Opening balance	848,162	2,739,661	3,587,823	828,076	2,865,900	3,693,976	808,076	2,969,694	3,777,770
Transactions:									
Appropriations	-64	125,170	125,106		103,894	103,894		58,038	58,038
Transfers of property from other agencies	-22	1,158	1,136						
Capital transfers	-20,000	-89	-20,089	-20,000	-100	-20,100	-20,000	-100	-20,100
Closing balance	828,076	2,865,900	3,693,976	808,076	2,969,694	3,777,770	788,076	3,027,632	3,815,708
RETAINED INCOME (reinvested in the power program) OR DEFICITS (accumulated net expense of nonpower programs)									
Opening balance	1,500,584	-1,482,155	18,429	1,830,453	-1,611,533	218,920	2,276,842	-1,738,359	538,483
Transactions									
Net income or net expense	426,415	-129,378	297,037	532,368	-126,826	405,542	621,000	-58,361	562,639
Capital transfer	-96,546		-96,546	-85,979		-85,979	-84,900		-84,900
Closing balance	1,830,453	-1,611,533	218,920	2,276,842	-1,738,359	538,483	2,812,942	-1,796,720	1,016,222
Total government equity (end of year)	2,658,529	1,254,367	3,912,896	3,084,918	1,231,335	4,316,253	3,601,018	1,230,912	4,831,930

that has been appropriated in years past is being paid to the Federal Treasury at today's interest rates on a regular basis. Every year we make a payment exceeding $100 million back to the Treasury for the initial investment that was made in the years prior to 1959.

Mr. **Myers**. All from operating revenues?

Mr. **Dean**. Yes, sir.

Mr. **Myers**. How do you allocate expenses then, with this difficult bookkeeping mechanism? How do you know how much to charge for each service?

Mr. **Dean**. I probably could let Mr. Edwards deal with that. He kind of keeps track of all that for us. He has been sitting over there at the end of the table quietly.

Mr. **Myers**. I wondered when you were going to get him in the act here.

Mr. **Dean**. You just made it about time.

Mr. **Edwards**. Mr. Myers, various people within TVA are working on programs that are related to the power program. They charge their time through a series of account numbers which are then accounted for in the power program, and against power revenues or power capital expenditures. If they are working on programs which are funded through appropriations, they likewise charge their time through a series of accounts set up to be funded through appropriations. And so in that way the time that they actually spend on a power program matter or on an appropriations financed matter is kept separate.

Mr. **Myers**. That is an expense in itself, isn't it, allocation and bookkeeping? I suppose you want a computer just for that?

Mr. **Edwards**. There is a certain amount of expense, of course, in doing that, that is correct, sir.

Mr. **Myers**. Wearing all those hats. I will get back to that question in a moment here.

You increased in this past year rates to consumers by 6.9 percent, I believe you said in your testimony?

Mr. **Dean**. Power rates, yes, sir.

Mr. **Myers**. Power rates. How does that compare to other utilities in the country, in a particular region?

Mr. **Dean**. Because for approximately three years we had no rate adjustment, and for one six-month period during that period of years we actually decreased rates because our revenues had exceeded our needs, after the 6.9 percent increase, our residential power rates are still the lowest in the United States, with the exception of the Northwest, which has far more hydro capacity than we have, and our commercial and industrial rates are in the lower part of the area that we serve. We are not the lowest in the Southeast, but we are in the lowest general area of the Southeast.

I do not know exactly what rates were applied by our neighbors last year. Of course, it would be a variety depending on which power system you deal with. I guess, Mr. Steffy, it would be all over the map.

Mr. **Myers**. I saw your bar graph compared to other cities, other comunities. I wondered how the increase applied.

Mr. **Dean**. Mr. Steffy might want to comment on that.

Mr. **Willis**. Since 1981 I believe we have had a average of about 2.3 percent increase over that time. That is one of the lowest increases of anybody around. We have been very fortunate over the last four years.

Mr. **Myers**. Refresh the memory of the committee. When you ask for a rate increase, who has to review this request?

Mr. **Dean**. The TVA board has the responsibility for raising the money to operate the power system. We have the authority to issue bonds.

Mr. **Myers**. No, the rate.

Mr. **Dean**. Issue debt, and the authority to set—that is what I was coming to—we have the authority to set the power rates.

Mr. **Myers**. There is no public service commission?

Mr. **Dean**. No, sir.

Mr. **Myers**. Nobody?

Mr. **Dean**. The TVA board is the public service commission in essence.

Mr. **Myers**. Pretty good deal. The largest utility in Indiana had some difficulties that you all know about, and they are trying to get an 8 percent increase right now, and they are getting hit over the head with that. Of course, they have to go to the Public Service Commission of Indiana, and I don't know how many months of hearing they are going to have to have probably before they get some action on it.

You say one-sixth, and according to my calculations here, that is approximately 16 percent of your generation is from nuclear. What would it be if you had Browns Ferry and Sequoyah on line? How would that change?

Mr. **Dean**. I guess I didn't make it too clear, Mr. Myers. One-sixth of our installed capacity. We have approximately 30,000 megawatts of installed capacity, including pump storage, gas turbines, and so forth. One-sixth of that capacity would be five licensed reactors of approximately 1,000 megawatts apiece, none of which are in service today. So if they were all in service, we would have another 5,000 megawatts in service. Our peaks in recent years, summer and winter, have been in the neighborhood of 20,000 to 22,000 megawatts, so as I said, fortunately we haven't had any dire problems of supplying the area with the absence of the nuclear plants. But looking to the future, we know that it is important to get them back in service as quickly as possible.

Mr. **Myers**. Someplace here the power that you had last year, it showed nuclear of 17 million kilowatt-hours, and you purchased 3.9. I can't find it right now.

Mr. **Dean**. Our nuclear generation.

Mr. **Myers**. That would come out to 16 percent. We are purchasing 3.9. Was the requirement that you purchase because you had these nuclear units off line, or what was the requirement for purchase?

Mr. **Willis**. That is in 1985, Mr. Chairman.

Mr. **Dean**. Were we an importer or exporter; do you have that?

Mr. **Myers**. I saw it someplace.

Mr. **Dean**. We buy and sell power every day. I guess the question is were we a net importer or net exporter.

Mr. **Willis**. We did purchase 3.9 billion kilowatt hours, as you mentioned.

Mr. **Myers**. As I recall. I can't find it now.

Mr. Willis. That is a billion kilowatt-hours a year. We delivered to other systems outside .6, so the net was a little over 3 billion kilowatt-hours.

Mr. Myers. My question is, would you have had to have bought that much if you had had those nuclear on line?

Mr. Dean. No, sir.

Mr. Willis. If we had all the nuclears. We didn't have all of our nuclear capacity operating in 1985.

Mr. Myers. You bought about 3.5 percent of your demand?

Mr. Willis. About 3.5. I think if we had them all on the line, but we had scheduled outages in 1985, so we didn't have all five available.

Mr. Myers. You are going to lose some revenue because you don't have these units on line. Do you have an estimate of lost revenue and what it is going to be in 1986?

Mr. Dean. Apparently it will be about $100 million. Is that reasonable?

Mr. Myers. How are you going to recover that?

Mr. Dean. It is money that you just don't have to use to put back in the system. Therefore, if you come out $100 million short, you have to borrow another $100 million to put capital improvements into your system.

Mr. Myers. Again in your justification on page 38, you have provision for depreciation and nuclear plant writeoff in 1985 was $288 million, estimate in 1986 will be $529 million, and the same estimate for 1987.

Mr. Dean. Those depreciation figures go up.

Mr. Myers. How much is depreciation and how much is writeoff of that figure?

Mr. Dean. I don't know. Do you, Bill?

Mr. Myers. Could you provide it for the record?

Mr. Dean. Yes, sir.

[The information follows:]

COMPARISON OF DEPRECIATION COSTS VERSUS NUCLEAR PLANT WRITEOFF

The following table provides a breakdown of the "provision for depreciation and nuclear plant writeoff" line item charged against operating income in the Statement of Income:

[In millions]

	1985	1986	1987
Depreciation	$288	$329	$384
Nuclear plant writeoff			145
Total	288	329	529

This, however, is not the total nuclear plant writeoff. In the same table there is an additional line item, "Amortization of canceled nuclear plants," that is not taken against operating income. Total nuclear plant writeoff is shown in the following table:

[In millions]

	1985	1986	1987
Nuclear plant writeoff:			
Operating income			$145
Nonoperating income	$181	$210	72
Total	181	210	217

It is anticipated that all the nuclear plant writeoff will be taken against operating income in future years.

Mr. **Myers**. You also have other income deductions, amortization of cancelled nuclear plants of $181 million in 1985 and $72 million esitmated in 1986.

Mr. **Dean**. We cancelled——

Mr. **Myers**. $210 million that should be.

Mr. **Dean**. We cancelled eight reactors over a period of years, which we could not justify continuing construction on. The cost of those reactors was in the neighborhood of $4 billion. We have provided——

Mr. **Myers**. That is your cost, $4 billion?

Mr. **Dean**. Yes, sir. We have provided for amortizing that debt over a period of about 11 years. It will be cleaned up in the early '90s.

Mr. **Myers**. Is that wrapped into your rates, that amortization?

Mr. **Dean**. Yes, sir.

Mr. **Myers**. And cost recovery?

Mr. **Dean**. Yes, sir, you have to recover it over a period of time. You are a banker, sir, you know you cannot keep an asset on your books if it will never produce anything.

Mr. **Myers**. You can't in banking. That is statutory.

Mr. **Dean**. We can't either. We had to proceed to get it off our books in an orderly fashion, and that is what you are seeing.

Mr. **Myers**. How many years do you have?

Mr. **Dean**. Eleven.

Mr. **Myers**. I think we have to do it in five. It is 20 years since I have been a banker.

Mr. **Dean**. We do have the services of Coopers & Lybrand. They happen to be our outside auditor, and they help us set up this type of thing to make sure it is accurate.

Mr. **Myers**. Then you can amortize that recovery of lost investment over a 20-year period and put it in your revenues, the rates?

Mr. **Willis**. It is over 11 years.

Mr. **Bevill**. Will the gentleman yield?

Mr. **Myers**. Certainly.

Mr. **Bevill**. There is one point Mr. Myers made that I think might help to go a little further on this to clear up one question. The TVA is a nonprofit quasigovernment corporation. Is that a fair description?

Mr. **Dean**. Yes, sir, TVA is a Federal corporation.

Mr. **Bevill**. Nonprofit?

Mr. **Dean**. That is correct.

Mr. **Bevill**. And your rates are pretty well controlled. You don't just set the rates. You have to understand the law that created TVA, you have to recover your costs.

Mr. **Dean**. The rates are set to cover the cost of operating the system and amortizing the debt.

Mr. **Bevill**. You cannot sell your power at less than cost, you must recover cost?

Mr. **Dean**. Yes, sir.

Mr. **Bevill**. And that includes the nuclear power plants, approximately $4 billion that is sitting there that has been stopped?

Mr. **Dean**. That is correct.

Mr. **Myers**. Over an 11-year period?

Mr. **Dean**. Yes.

Mr. **Myers**. That you are going to recover that?

Mr. **Dean**. Yes, sir.

Mr. **Myers**. All of them are amortized over the same period of time?

Mr. **Dean**. The whole block of cancelled plants were in that package.

Mr. **Willis**. Mr. Sanger might want to make a comment on that.

Mr. **Sanger**. Mr. Myers, first, as chairman Bevill points out, our statute provides under Section 15(d) that TVA is to charge rates annually that produce revenues to cover specified items, and all of those are operating expenses, the repayment of our debt, interest on the debt, certain payments to Congress that the chairman mentioned that have totalled over $4 billion since 1959.

Mr. **Myers**. That is all provided in the statute?

Mr. **Willis**. Yes, sir, 15(d). Then in addition to that, we have contracts with these 160 distributors to whom we sell the power wholesale, and they retail it. Those contracts specify a procedure for TVA to change rates, and we have to go through those procedures, but it is the board's final determination as to what those rates will be.

The 11-year period is a period that our financial people, in consultation with our accountants, including outside accountants, determined was reasonable on our system considering our capability of producing power and generating revenues.

Mr. **Myers**. That was self-imposed?

Mr. **Willis**. Yes, sir, that is correct.

Mr. **Myers**. FERC doesn't have any——

Mr. **Willis**. We are required by Section 10 of the TVA Act to keep our system of power accounts consistent with the FERC procedures.

Mr. **Myers**. FERC has no responsibility, or do you have responsibility to report to FERC?

Mr. **Willis**. It has no regulatory jurisdiction over TVA.

Mr. **Myers**. What about "construction work in progress," CWIP; can you charge your rates to CWIP?

Mr. **Dean**. We have some of it in the rates. It is a formula. I have got a man here, Jim Durall.

Mr. **Durall**. I think this question comes up more in terms of electric rates than accounting, and in the design of our rates, in the allocation of costs, we consider AFUDC and we do capitalize interest into the assets. It has been our stated policy that we think that that is the basic correct way for rate purposes in accounting.

The confusion that we have about it is the conditions setting down the revenue requirements for TVA that basically require us to produce annually the total amount of debt service that we have. That sets the total revenue, but we do the AFUDC accounting and we, in effect, for accounting purposes keep CWIP out of the rate base. When we establish our total revenue requirement, what that really does is increase the reported net income or change in retained earnings as a result of capitalizing interest.

Mr. **Myers**. So it is back in again?

Mr. **Durall**. Yes, put it back in the assets and put it on the liability side, increase in retained income. I am sorry I can't make a clearer statement.

Mr. **Myers**. I understand. I am just a country banker but that is not too complicated. Even I can understand it.

Mr. **Durall**. Thank you.

Mr. **Myers**. I do have difficulty yet seeing these consolidated expenses and revenues.

Mr. **Dean**. You are the first person I have ever heard that could understand what he was talking about.

Mr. **Myers**. Is that the reason you keep him? He overpowers everybody.

Mr. **Dean**. Mr. Myers, we had dinner last night and I said I would like to propose a toast to people who work the valves. I used to work in a utility system. There were people who paved over the valves and their jobs were secure because they were the only people who knew where the valves were. This guy is the valve paver-over.

Mr. **Myers**. Back in Indiana we say we know where the skeletons are.

Mr. **Dean**. We have some of those, too. That is a different department.

Mr. **Whitten**. You didn't pick up that habit?

Mr. **Dean**. Paving over valves?

Mr. **Myers**. I have two more questions that I will ask and I apologize to my colleagues here. Someplace I say, see also in your justification that there is a figure this year of almost a half billion dollars from DOE for power they are not going to use in enrichment. Does DOE actually pay you that much, or is that a figure that you can negotiate?

Mr. **Dean**. We have a contract with them that has a minimum bill requirement. It was negotiated with them many years ago, based on their request, their estimate of what their needs were, and because of that estimate, the Tennessee Valley Authority launched into construction of nuclear plants.

They don't need the power anymore, and they are paying according to that minimum bill contract, which drops off over a period of years, and we in turn, TVA in turn—I wasn't there then, but TVA in turn launched into a lot of these nuclear programs to serve that need. The needs have changed, but the demand—Herb can elaborate on the way this contract——

Mr. **Myers**. The change is this year, which makes it difficult.

Mr. **Dean**. Yes, sir.

Mr. Myers. They do buy some, I take it?

Mr. Sanger. The reason for that change, Mr. Myers, is that we set up our cost on system average costs. We don't have a dedicated plant for any particular load, so whatever our fixed costs are is essentially the demand charge or the minimum bill component. TVA has already incurred those costs. This was an enormously big contract with DOE. It is over 4,000 megawatts, and we undertook that construction. We made those expenditures, and all of our customers pay a minimum demand charge or minimum bill.

Mr. Myers. But the fact that you are now buying 3.5 percent of your energy, you don't reduce that, pass that on to contractors like DOE?

Mr. Sanger. Whatever kind of economies we have in our energy purchases would be passed on to DOE or any other customer in the energy charge, which is your variable component of the rate. You have the demand charge, and the energy charge, so if we are able to buy energy more economically than we can generate it on our system, it would be passed on to all of our customers.

Mr. Dean. But DOE is not using much energy, and their minimum bill is based on a demand component.

Mr. Myers. Is that annually negotiable or is that just fixed?

Mr. Dean. No, that is contract.

Mr. Myers. That is fixed. They have no choice and you have none?

Mr. Sanger. That is correct.

Mr. Myers. They come and look at your books?

Mr. Dean. Everybody comes and looks at our books.

Mr. Myers. And write the check?

Mr. Sanger. That is right.

Mr. Myers. Everybody doesn't, because all of us don't understand them. These $4 billion in nuclear plants, are you going to sell them or what are you going to do with them?

Mr. Dean. The United States is littered with nuclear plants that were started and not finished. That is not an effort to say that we didn't overestimate the needs of the valley.

Mr. Myers. Sure. You weren't alone in that, though.

Mr. Dean. What you do is you try to salvage what you can from the equipment that you had bought. In some cases we are fortunate that we have other nuclear facilities. We have, for instance, taken some heat exchangers from plants that were never built, and installed them in some of our existing plants, because they were improved models. We have a lot of equipment that we will sell for the best price we can get, some of it for just a fraction of what it cost.

Mr. Myers. But you don't at this point at least expect to sell in the near future a plant sitting out there that is partially complete to one buyer?

Mr. Dean. No, sir.

Mr. Waters. There is no market.

Mr. Dean. There is no market.

Mr. Myers. I have one observation. Speaking of skeletons, I have a prospective opponent who is blaming me for high unemployment rates in my area, among other things, and I notice in your chart here, in your testimony, you say 41 counties out of 200 and some in the area you serve have more than twice the national unemployment average.

My opponent is blaming me—I don't have any counties quite that high—that I have been in here for 20 years and haven't done better. You have been there for longer than 20 years and you still have 41 counties. Who would you blame?

Mr. **Dean**. We have counties, these counties that particularly have trouble, and a lot of them are similar to yours in the sense that they have coal economies to a great extent, and the price of coal tends to track the price of crude oil, as you know. We all know what has happened to the price of crude oil, and the price of coal has dropped off. There is not near the demand for coal, and there are hard times in coal-mining areas.

In addition to that, rural counties such as we have, the ones that were on the map from north Mississippi, they are having a struggle because, as you again know, small farmers, particularly farmers that had to borrow money, are hard pressed.

Mr. **Myers**. Hit me again.

Mr. **Dean**. I would like to think that the programs that we are involved in would be of some help to these counties.

Mr. **Myers**. You think I can sell that same argument back in Indiana this fall?

Mr. **Dean**. They won't change the price of coal much.

Mr. **Myers**. Thank you for your testimony. I have some other questions I will put in the record. I have taken enough time here.

Mr. **Bevill**. They will be responded to in the record.

Mr. **Bevill**. The chair recognizes Chairman Whitten.

Mr. **Whitten**. Thank you, Mr. Chairman. I am sorry to be late but I had a meeting with the Speaker about the overall budget situation. I think it is well that our colleague from Indiana, who has served so well and so long on this committee, goes into the details of this operation.

We have a generation of people that doesn't remember how it was before you had the TVA, but the fact that it has done such a great job down there doesn't mean that we don't have problems today. Six or seven states are absolutely dependent on you for power. This power you have to buy, is that during a tight period or is that surplus power that the other folks have?

Mr. **Dean**. We buy that primarily because the way we operate our coal-fired system, you bring on your most efficient plants first and leave them on. The last plant you bring on is your least efficient plants. Sometimes you can by from your neighbors for less money than it would cost you to operate your oldest and least efficient plant. That is one of the main reasons we buy power from our neighbors.

Mr. **Whitten**. As you know, I have followed TVA from the beginning. I won't go into detail as to what the situation was down there. Because my district was half private power and half TVA, I had to know both sides of the issues it back through the years. But I do realize, and I think everybody does, including you, that some mistakes have been made in recent years with regard to nuclear power.

Our country feels a little differently toward nuclear power than some others, but it has also become apparent recently that in handling nuclear power you have got certain people who are going to have to be satisfied. It may be that you know and maybe you don't, but if the other people aren't going to acept your method of operation—I am glad to see you step in and do that. It is unfortunate that it happened, but I think you have described it rather well.

Another thing I would like to mention here, that there are quite a number of things that you do in addition to your power operations. It is not usually known that if you didn't do it, the forestry department would have the responsibility or the soil conservation people or some other government agency. So if we need to restrict these outside activities that you do, we would have to be required to increase those programs that are carried on by the others.

I want to say to you that I have tried to keep up with a man who used to work with us here who is with the folks trying to get it straightened out on a nuclear basis. It is highly essential and I trust and hope that you are all meeting your problems. As far as our information goes, you are. I want to say again that TVA is the electric power source for that area, and I am sure that you will do all that you can to carry it out.

I think my length of service with the TVA and with your problems is such that you know how I feel about it, but we need to ask these searching questions. I am glad to see you working to straighten it out.

Mr. **Dean**. Thank you, Mr. Chairman. We are certainly glad you could make it this morning.

Mr. **Bevill**. The chair recognizes Mrs. Boggs.

Mrs. **Boggs**. Thank you.

Welcome to all of you. It is very interesting and enlightening to have you here as always. I am enormously proud of the work that you do, and am very happy to hear about it when you come before us. It makes me apprehensive about some of the cuts in your budget. I know that you are going to supply the chairman and the committee with the specific breakdowns, and the effect of the budget cuts upon each of the areas of your responsibility.

I was especially concerned in the land and forest resources, where you had a cut from $4,130,000 to $550,000, in the management of the critical wetlands, 15,000 acres, in the 10 dewatering areas. Of course, these are the ones that are adjacent to your mainstream reservoirs. I would like to know how you are going to be able to ably manage 15,000 acres of critical wetlands when you have your money so drastically reduced.

Mr. **Dean**. Yes, ma'am. That is a drastic reduction, and I think I would like to ask Dr. Bond to discuss that with you a little bit. Bill.

Mr. **Bond**. Thank you. Actually, within the budget that the administration has proposed $550,000, that would be used for a couple of dewatering areas. Any other work in the wetlands or management on our own reservoir systems, all those things that we do in that budget category, Mrs. Boggs, will not be done. I have no solution to say as to what would happen at this point.

Mrs. **Boggs**. I suppose one of the major contributions you make to the nation is in your cooperative work with other groups, states, other governmental agencies, and under your natural resources program you talk about the initiatives that seek to preserve the long-term benefits of TVA's investments, by monitoring the water quality trends in both tributary streams and the reservoir system, TVA working alone and in partnership with the valley states, other federal agencies, the private sector, will seek to improve surface water management, remedy existing problems, manage wetlands, research acid rain impacts, and demonstrate innovative alternatives to deal with the widespread water quality problems.

Can any of you tell me how you are going to manage to work cooperatively in a significant manner if the monies that you have for these programs is curtailed?

Mr. **Willis**. May I make a comment, Mrs. Boggs, on that. We will be severely restricted in what we can do. Under natural resources, the primary thing we could do is just manage the river system that we have for navigation, flood control, recreation, but we would lose a lot of our ability to work with other state, federal and local entities to enhance these wetlands and do these other research projects to get the benefit of this national demonstration. We would lose our capability to do that.

The money we would have left would give us just bare maintenance money to maintain the facilities, but we would not be able to carry on a lot of national demonstration projects, such as those that you have mentioned, and we would lose our ability to cooperate with the states and other agencies to use this investment that has been made down there for the benefit of others, the region and the nation. We would just lose that capability of being able to do that.

Mr. **Dean**. Of course, you know from your own experience in Louisiana that the ecologists are just now learning the importance of wetlands in fish production and that type of thing.

Mrs. **Boggs**. It is a very critical need that you have been meeting, not only for the wetlands along your mainstream reservoirs, but as a demonstration to all of the other areas of the country who need your expert knowledge, and your experience in this field.

In the field of energy, the Secretary of DOE was here the other day, and he was commenting on the fact that conservation and other kinds of development of very energy-efficient plants and household appliances and various kinds of factory input had led to some of the energy independence that perhaps we are able to enjoy in the event of another kind of international difficulty.

I know that TVA was really responsible for large quantity and the final quality of many of these projects, and I notice that you do state that conservation is still your prime alternative to conventional generating stations. Do you also equate some of the lower power rates that you are able to charge with the fact that you were able to get people to conserve and to put into place conservation measures? Would you please tell me something about your new fluidized bed combustion plant demonstration.

Mr. **Dean**. Yes, ma'am. That is a cooperative project that involves TVA. This is power funds, not appropriated, but it involves TVA in which we are allocating a nice large sum of our ratepayers' money. We have money from the State of Kentucky, we have money from the Duke Power Company, a private company, and many other privately owned power companies.

We have money from the Electric Power Research Institute. It is a cooperative venture, in which there has been over $200 million pledged, and construction has started on this fluidized bed plant, which will produce 160 megawatts of power. It will be hooked right into an existing generator. It will become a power producer. That plant, because it burns coal mixed with limestone, will release essentially no harmful sulfur dioxide or nitrogen oxide to the air.

It is the best way that anybody has found yet to burn coal. We think it will mean a whole lot in the future, to the power industry and to the coal-producing states, particularly where they have high-sulfur coal, which is hard to burn without releasing a lot of sulfur dioxide. I think we all agree if we are going to have energy independence in this country we are going to have to come more electrified, and we are going to have to live on our own coal and our own uranium.

We are going to have to live on our own resources and hopefully spend less and less on foreign imports. We have been one of the leaders in the development of electrical vehicles, for example, and that is one of the ways we can depend less on petroleum. We have a temporary glut of petroleum. Prices are dropping and that is all well and good, but the supplies are finite and the experts say in perhaps 50 years it will all be essentially gone.

Mrs. BOGGS. The environmental quality, of course, of the demonstration is something that you must be very proud of.

Mr. DEAN. We are. We have a 20-megawatt plant that is running now, and it is producing extremely good results.

Mrs. BOGGS. In your cooperative efforts with other agencies, could you tell me what you have been able to do in the past year on your research on acid rain impacts?

Mr. DEAN. Yes, I can. I think that, again, I will turn to Dr. Bond since he has got those people directly in his purview.

Mr. BOND. Mrs. Boggs, on the acid rain question, in the last year, in the aquatic area, with regard to impacts on fish and other aquatic organisms within the TVA region, we have a number of reservoirs that we have identified where acidity in the reservoir is causing damage and problems with the aquatic organisms.

With regard to terrestrial activity such as trees and plants, we have some problem areas and some problem species, but we really haven't determined yet exactly whether it impacts upon the soils which are causing most of the problem or whether it is the acid deposition or some combination of the two. But we do know that we have negative impacts and we do know that we have to take some measures to correct that.

Mrs. BOGGS. One of my other subcommittee responsibilities has a lot to do with environmental quality and with the acid rain determinations, so I am very grateful to you.

Thank you, Mr. Chairman.

Mr. DEAN. We will be pleased to have you stop off on your way to New Orleans someday and see some of the things we are doing.

Mrs. BOGGS. I would love to do that. I was up in your country, in Tom Bevill country, a couple of months ago, and was able to ride through some of the remarkable development that TVA has provided to that whole area.

Mr. BEVILL. You get that old southern hospitality that you are used to.

Mrs. BOGGS. That is right.

Mr. **Waters**. I just wonder, Mrs. Boggs, if I might take a minute to ask, hae you ever visited Land Between the Lakes?

Mrs. **Boggs**. No, I never have. I was going to ask that question next but I thought that I had used too much time.

Mr. **Waters**. We would like to invite you to LBL. I think with your interest in conservation and the environment, you will find a number of things going on there. I think one of TVA's very top lady administrators is with us, our manager of LBL is with us, Elizabeth Thach.

Stand up, Elizabeth.

She is our Manager of Land Between the Lakes. I was up there last weekend with 450 other people at the Eagle Weekend, and saw a number of eagles back in the wild at LBL, which was a thrill to all of us that were up there. TVA has done some things that I am very proud of, and I think you would find it interesting. We would like to have you do that.

Mrs. **Boggs**. I thank you.

Mr. **Dean**. You will see buffaloes, eagles, antelope.

Mr. **Bevill**. Land Between the Lakes, I remember it is in the budget, that you have zero dollars.

Mr. **Dean**. That has been scratched out, yes.

Mr. **Bevill**. If you will tell us what is going to happen to the Land Between the Lakes with no money.

Mrs. **Boggs**. They are zeroed out in 1987.

Mr. **Dean**. There are no plans. Last year it was also scratched out and the Congress restored funds. There are no plans. It would cost approximately $2 million a year to look after the property in this area.

Mr. **Bevill**. Would you put that in the same statement I mentioned there, the impact as to what the budget contains, that is, if we follow the budget, what will happen to Land Between the Lakes.

Mr. **Dean**. Yes, sir.

Mrs. **Boggs**. Mr. Chairman, you notice when they have a program that is zapped out that they are really going to have to work hard on, they have a lady in charge.

Mr. **Bevill**. That is correct.

Mr. **Myers**. Mr. Chairman, would you yield? Do you charge admission to get into Land Between the Lakes?

Mr. **Dean**. There are charges in several fields. We operate in the summertime an 1850 farm setup, where people can go see how people lived in the 1850s.

Elizabeth, you are charging now for that, and camping you are charging for. You might tell us some of the things you are charging for—hunting, camping.

Ms. **Thach**. We are charging for all program activities, for camping, for our group camps, educational activities in the group camps, but we do not have an admission charge subject to the Land and Water Conservation Fund Act. Our revenues are about $1.5 million.

Mr. **Dean**. She sells timber. It is a very unique place.

Mr. **Bevill**. The chair recognizes Mr. Watkins.

Mr. **Watkins**. Thank you, Mr. Chairman and Members of the committee.

I am glad to see all of you here. I, for one, have been to your area and visited with the people and gone to western North Carolina as well as Knoxville and many other areas to see and to try to pick up ideas. I have taken back home some ideas. I think you are doing some good things.

The only thing I regret, John, is through history I understand the Arkansas River and White River in Arkansas, Oklahoma, was approached by FDR about carrying out this designation, and our people thought it was the wrong thing to do and we turned it down.

Mr. **Myers**. Maybe they were right.

Mr. **Watkins**. FDR went down to the Tennessee Valley area and they lined it up. As one of my constituents says to me, and I quote, "Just give me one of them TVA things and I will be all right." It will be a big help. I know you all are doing some things in providing expertise.

I want to ask a question about what kind of a relationship you have with the Southeast Power Marketing Administration.

Mr. **Dean**. They market the power that is produced on the Corps of Engineers dams on the Cumberland River, and we buy some of that power from them and the rest of it goes to various places in the Southeast. If you want more detail, I will be glad to get that for you. That is a very general answer.

Mr. **Watkins**. Is the administration also proposing to privatize——

Mr. **Dean**. SEPA.

Mr. **Watkins**. Is that what you call it?

Mr. **Willis**. Yes, they are.

Mr. **Watkins**. I was thinking about Secretary Hodel being in here yesterday and his term was "regionalization" instead of "privatization." Of course, the administration wants to do away with the TVA also. I think TVA offers a great deal of expertise. I don't think we should lose in my area of the Southwest Power Administration, as it is called. It looks like there is some expertise there that could be utilized in the benefit of the TVA area involving them. I will put it this way, brother: If it starts to go, I would be looking at it, if I were TVA.

Mr. **Willis**. We have a contract with SEPA. We take about 75 percent of the power they generate on those Cumberland River dams, the Corps. Our contract runs out in about 1994 with them, and under privatization I guess we would have to negotiate with whoever owns it then for whatever price we could get.

Mr. **Watkins**. If they have their way, they are going to privatize that area too.

Mr. **Willis**. They are just a marketing agency. They don't own the dams.

Mr. **Watkins**. I understand. I understand how they work.

Mr. **Willis**. The privatization is just privatizing the marketing part. That is what they are talking about.

Mr. **Watkins**. Is TVA at all involved overseas?

Mr. **Dean**. Not to any great extent. TVA people are called on to go overseas, particularly by USAID, on a frequent basis, because we have got people that are experts in various phases of agriculture, hydro generation and that type of thing. When they go, they go under contract usually to USAID, in which USAID pays us back for the services of these people.

We have no overseas offices or anything of that nature. We are not buying much equipment overseas anymore, like in the old days when they were buying certain generators and things from people like Brown-Boveri. The primary activity is the kind I mentioned where we used to consult overseas countries under development primarily.

Mr. **Watkins**. Are any of the agencies encouraging you to use your expertise also a little bit more in the United States?

Mr. **Dean**. We are certainly available, and we have contracts with some other agencies. John Shields, you have got some with the Agriculture Department, I guess?

Mr. **Shields**. Contracts with all of the major agriculture departments in a lot of states.

Mr. **Dean**. John Shields is the manager of the Office of Agricultural and Chemical Development.

Mr. **Bevill**. Do you want to expand on that for the record on Mr. Watkins' question?

Mr. **Dean**. Mr. Shields is quite capable of expanding on that.

[The information follows:]

CONTRACTS WITH STATE AND FEDERAL AGENCIES IN THE TENNESSEE VALLEY AND ACROSS THE NATION

We have a number of contracts with State and Federal agencies in the Tennessee Valley and across the Nation. Some of these contracts are jointly funded; others are on a reimbursable basis to TVA.

In the Tennessee Valley, for example, we have contracts with the land-grant universities to conduct agricultural research and action-oriented agricultural development programs. In most cases each TVA dollar leverages two dollars from the contracting universities to conduct development-type programs of interest to TVA and the universities. In the case of research, the universities usually provide staff and funding equal to the TVA input. We also work with State departments of agriculture and soil and water conservation commissions in conservation programs.

We have research contracts with land-grant universities in more than 20 States. The emphasis is on studying fertilizer use efficiency, evaluating new fertilizers, conservation farming systems, and related areas where TVA expertise is needed in helping improve State soil fertility programs and farming systems.

We have several reimbursable contracts with public agencies that are interested in using TVA's research and development expertise. The Department of Energy, for example, has contracted with us to conduct research and development activities in the area of producing liquid fuels from biomass sources. We are making good progress in developing this technology. We also administer the DOE's Southeastern Regional Energy Program through contractual arrangements.

We have contracts with the Department of the Army to conduct a number of technical studies, provide technical assistance, and assist in maintaining the Department's Phosphate Development Works at Muscle Shoals, Alabama.

We also have contracts with private organizations, such as the Electric Power Research Institute and fertilizer companies. We provide a variety of research and technical assistance support in the areas of coal gasification technology, environmental protection, and fertilizer production, marketing, and use.

We expect our reimbursable contracts in FY 1986 with U.S. organizations to yield about $5 million in funding. We also have contracts with USAID for about $760,000 to provide technical assistance in fertilizer and biomass technology.

Mr. **Watkins**. Do you utilize any discretion using monies for various studies that might be common problems, common in areas?

Mr. **Dean**. Mr. Sanger just reminds me we have got some contracts, for instance, with EPA on air and water problems. We have got a lot of interlocking contracts of that nature with various and sundry federal agencies.

Mr. WATKINS. I will be watching with great interest. I think you know that you have a lot of friends on this subcommittee as far as trying to see some things continued, in order to develop the area, as well as the generation of electricity, and trying to do a job there for the people.

I can only wish you well. I will be listening with my colleagues. I know I have one on my left here who has got quite an interest in the Tennessee Valley Authority, so I won't take up any more time, but we are trying to lend support where I can along the way.

Mr. DEAN. Thank you, sir.

Mr. BEVILL. Mr. Boner.

Mr. BONER. I would like to ask you some questions that relates particularly to projects in Tennessee and then I want to discuss LBL and then another problem that we are facing in Tennessee. In particular, would you give me an update on where we are on the project where we originally initiated that in working with TVA with the Industrial Training Center and the Private Enterprise Incubation Center?

Mr. DEAN. Yes, sir, Mr. Willis will answer that.

Mr. WILLIS. We are glad to. It is moving along very well. We are just completing construction of this Private Enterprise Center and getting it ready for activity in the Nashville area. We are working with Tennessee State University, and getting the director for that and the trust funds has been developed for the operational phase for the next 30 years. That is on track, going real good, and moving out. It is going to be in productive mode late this spring. The center is completed and staffed.

Mr. BONER. On the Incubation Center, what is now the total cost in federal dollars that we put into that, counting the building of facilities?

Mr. WILLIS. I think we had a little over $1 million there and about a million in operations, I believe.

Mr. BONER. For the benefit of the committee, would you explain to us what the purpose of that Incubation Center is.

Mr. WILLIS. The purpose of that is developing new businesses, starting up new businesses, helping small business people, bringing expertise together from the universities there and the business sector, to come in and help new businesses get started up and be successful.

As you well know, you have a high failure rate of new business starts in that area, and what this is geared to do is to be able to help people learn the rudiments of business that they want to get into, tell them where they can go to, to get their financing, venture capital, or whatever they need, business practices marketing, and things like that, that they need to be successful, particularly in that first year of operation.

We think that a great number of new businesses, new enterprises will come out of that center down there. The people in the area are very excited about it.

Mr. BONER. And then after this initial phase of the federal contribution, you are setting up a trust fund that will help to carry on the operation of the program?

Mr. WILLIS. That will carry on the operations for the first three years. By that time they should have enough initiative to keep the program going.

Mr. BONER. And what will the Federal Government contribute in the way of dollars over the next three years?

Mr. WILLIS. It is about $1 million.

Mr. BONER. So $1 million will be the total amount that you will contribute?

Mr. WILLIS. Yes, through TVA. I don't know if some others are involved in that or not.

Mr. BONER. Where are we on the Industrial Training Center?

Mr. WILLIS. That program is in operation. It has been training people. I think they have had more than 150 people enrolled, the graduates and ones that have been trained, the first 81, we were 100 percent successful in placing these people into high-paying jobs. This craft program really trains engineers, mechanics, electricians, pipefitting, welding, automated welding, high skill demand jobs, and we have been very successful in putting together a good training program and placing all of the people that have been trained, so that has been a very successful program.

Mr. BONER. Mr. Chairman, the reason I cite those two programs, if you will remember back when we were trying to stimulate the economy, I met with representatives from the TVA and had asked them if they would consider a project similar to what you have over I think in east Tennessee, you have a similar project like this in east Tennessee.

Mr. WILLIS. Yes, sir.

Mr. BONER. Where it is a part of TVA's economic growth and development they would do so, and I think that we will find that this will prove to be beneficial. As you have already said, the number of people that we have retrained into other jobs, and a number of those have been, if I am not mistaken, former TVA employees?

Mr. DEAN. That is correct.

Mr. WILLIS. That are out of work.

Mr. BONER. Tell me, the high technology training program, what is the status on that?

Mr. WILLIS. We are working with the Nashville State Technical Institute over there to put that program in place. I think the curriculum has been established. We are well on the way to getting the course implemented in automation. Robotics are getting started, the electronics technology. There is going to be a big demand with that, particularly with the new automotive industries that are coming into middle Tennessee. It is going to be a big demand for people with automated control technology training, and we are helping with the state, with the private sector, with others, to retrain a work force to be ready for the new jobs that are coming in. The program will be carried out mostly through the state technical institute there, with our assistance in developing the curriculum and the teaching criteria of how to train these people that we successfully demonstrated in a few other places around the valley.

Mr. BONER. On your funding for the black college initiative that relates to Tennessee State University, you have got a five-year cooperative program underway, where you propose to spend approximately $2.5 million. How many years are we into that program, how much money has been spent, and will any of the cutbacks have an impact on that program?

Mr. **Willis**. Dr. Bond, do you have some figures on that?

Mr. **Bond**. Yes, sir. We are in about the second year. The cutbacks of Gramm-Rudman will have very minimal, if any, effect on that. There are funds for the next three years, but after that I am not sure. That is supposed to generate other sources of income by the time the next three years are up.

Mr. **Boner**. Mr. Chairman, I would like to address the issue of Land Between the Lakes. I am concerned about it, because there are a number of people who live in the Fifth District of Tennessee who take advantage of the resources of the Land Between the Lakes.

As I understand it, the President has asked for zero funding in that. If that were to happen, how much would it cost just to close up TVA's operations on Land Between the Lakes?

Mr. **Dean**. Our people have estimated it would cost about $2 million a year just to keep the property from falling apart and keep people from vandalizing it.

Mr. **Boner**. So just to put it in mothballs or to maintain it?

Mr. **Dean**. We would have to keep a pretty good security force in there too. It is a big area.

Mr. **Boner**. How much would it cost to be able to maintain it at the present level that it is at right now?

Mr. **Dean**. It is around $7 million.

Mr. **Boner**. About $6.9 million?

Mr. **Willis**. $6.9 million.

Mr. **Dean**. I am getting the nod from Ms. Thach.

Mr. **Boner**. I serve as chairman of the Tourism Caucus here in the House of Representatives. In Nashville we think tourism is a vital part of our industry, as does the entire State of Tennessee. What is the figure that is estimated that the operation of the Land Between the Lakes brings to the Tennessee and Kentucky area that are most affected by that?

Mr. **Dean**. What do you have on that?

Ms. **Thach**. One hundred fifty million dollars in Kentucky, $50 million in Tennessee, a total of $200 million for the tourism industry.

Mr. **Boner**. Then we are looking at approximately a $7 million investment that renders back to the areas that it has affected almost $200 million?

Ms. **Thach**. Right.

Mr. **Boner**. Not quite a 30-to-1 ratio, investment to receipts that we gain. It would appear to me that those over at OMB ought to recognize that that is an investment well made, and one that returns many times back to the community. What we are actually talking about is that you couldn't really just zero-fund Land Between the Lakes, could you?

Mr. **Dean**. That would be a tragedy. You would have to abandon roads, buildings, everything.

Mr. **Boner**. And if you abandon that and accidents were to take place and people trespassed on the property, would that mean that TVA would then have to assume any liability for any injuries or anything that would take place?

Mr. **Dean**. Of course. You know about hunting. There would be times of the year there would be people wandering around with high-powered rifles, so you could have a certain amount of chaos.

Mr. **Boner**. And I believe you also said that the total revenue that is brought in from the revenue on the program side is what, about 1——

Mr. **Waters**. $1.5 million.

Mr. **Boner**. So we are looking at the difference between $1.5 million and $7 million, which is what would be the net difference between revenue brought in and what the Federal Government would appropriate for the operation?

Mr. **Dean**. I think maybe she gets the $1.5 million on top of the $7 million.

Ms. **Thach**. Right, on top of the $7 million. The total operating budget is close to $8.5 million.

Mr. **Boner**. Let's suppose that we zero fund it, what would you do, as the owners of the Land Between the Lakes, what could you do with it?

Mr. **Dean**. As I said, just preserve it, try to keep it from deteriorating, and try to keep some order. And we would have to find money somewhere to do some of that. It would probably be from another program.

Mr. **Boner**. Some have suggested that perhaps you ought to sell it. Is there anybody out there that you think would be a potential buyer for it?

Mr. **Dean**. We have had no candidates for that.

Mr. **Boner**. Have you approached Kentucky and Tennessee either individually or jointly to see if they would want to take over the ownership of it and purchase it?

Mr. **Dean**. We haven't made any formal approaches to either state. They have got their own budgetary problems.

Mr. **Boner**. Has either state approached you on it?

Mr. **Dean**. No, sir, not to my knowledge.

Mr. **Myers**. It hasn't been for sale, though, has it?

Mr. **Dean**. No, sir, it is not listed for sale.

Mr. **Boner**. If you were to put a dollar figure on the cost of it, do you have any idea what that would be?

Mr. **Dean**. No, sir, I don't.

Mr. **Boner**. You have got how many acres?

Mr. **Waters**. It is 170,000 acres of land. You make a real good point, Mr. Boner. If I might elaborate on that a little bit. This land, of course, as you know, lies between Kentucky Lake, which is the impoundment of the Tennessee River on the west, and Barkley Lake, where Barkley Dam impounds the Cumberland River on the east, and it is a long strip of land there, with a considerable amount of lakefront, shorefront property, with 170,000 acres of pretty much woodland with some cleared land. It is the second largest federally owned land east of the Mississippi.

The Great Smokey Mountains National Park of course is larger, and it has visitation second only to the Great Smokey Mountain National Park. It provides a lot of the same services that a national park does except there is also a great difference. We have a number of programs there where we are trying to learn how to live with the environment, cultivate the land to a certain extent, take off the timber, hunt, fish, but still doing it in a way where we don't damage the environment. We preserve the land, we preserve the natural resources, and yet, hopefully, man can learn to live in such an area.

Mr. **Myers**. Would you yield there? Does TVA own it in fee simple?

Mr. **Dean**. Yes.

Mr. **Myers**. It doesn't revert back to the original landowners?

Mr. **Sanger**. No, all of the land was acquired in the name of the United States, title in the United States.

Mr. **Waters**. We own it in fee simple.

Mr. **Boner**. So obviously in making cuts the Department of the Interior would not be a potential customer, because they have their own problems with money.

Mr. **Waters**. They don't operate the same kinds of programs that we have going on in Land Between the Lakes.

Mr. **Boner**. What I hear you saying then is that the Land Between the Lakes is not just a recreational facility, it is also a research facility as well?

Mr. **Dean**. It is quite unique. You won't see many national parks where, for instance, you can have an area designated for motorcycle riders. We have hunting in there which you don't have in a lot of national parks. It is very carefully controlled, of course, and we test natural resources innovations. It is a different kind of an operation, very innovative.

Mr. **Waters**. When I was up there last summer, Mr. Boner, there were I think 40 or 50 school children from your district, from Nashville at least, that were there with teachers, universities that have graduate programs in certain of the environmental sciences. They use these graduate studies as teachers, teaching environmental courses to these children. We have very small dormitories there, where they come and live and take these courses and are able to enjoy Land Between The Lakes. It is a very satisfactory program.

Mr. **Boner**. It is also my understanding that you have been able to charge some type of fees on the program side of it, but obviously because of other laws, you are not allowed to charge an admissions fee.

Ms. **Thach**. Yes, sir.

Mr. **Boner**. Would it not be more appropriate or at least a better course if the OMB and the Federal Government decided that they would try rather than putting in mothballs what I think is a tremendous contribution to the nation, rather than closing it up and turning our backs on it, looking at the possibility of changing laws that would allow TVA to charge other fees to try to reduce that amount of deficit that it would cost to run it.

Mr. **Dean**. That is a philosophical question, and I think that we could debate it from now until sundown. I can see, for instance, the political effects of setting a tollgate on the entrance to the Great Smokey Mountains just above Gatlinburg. On pretty days when the leaves are pretty, the cars are already lined up for miles waiting to get in. That is all we need now is a tollgate down at the bottom of the park, and it would double the line. They would be lined up all the way back to Knoxville.

I think there is this question, do we want to ask people to buy parks with their tax money and then pay again to get into them. That is the philosophical question. I am not really qualified to debate that.

Mr. **Boner**. I agree with you, and I don't think they should. I think the point I am trying to make is, one, I think the Federal Government has an obligation to maintain it, to keep it in the condition that it is at the present time, and I think it is a disgrace that this administration would say that we are going to attempt to mothball that facility and not allow the people who live around there to enjoy it, and not allow the businesses that are able to survive to enjoy it.

Most importantly, if we had to go with the option of either closing it or not allowing the Federal Government to fund it, then certainly I think that the best course would be to look at that possibility rather than to say we are going to close it up and suddenly have 170,000 acres of land that will no longer be used by the public. To me I think it is very shortsighted.

I want to change to one other issue that is really not one of your issues, but you are affected by it to some extent. It is a little project that they are discussing about placing in Tennessee called a monitored retrievable site. It has to do with nuclear waste. I wanted to say there is mixed emotion in Tennessee about that, but I don't think there is much mixed emotion about it. I think pretty much everybody knows exactly where they are on the issue.

I asked you to submit to me some questions and you did so as it relates to the fund that has been set up, the Nuclear Waste Fund. It is my understanding that the TVA ratepayers themselves in 1983 paid $15 million into that fund, in 1984 paid $25.8 million, in 1985 paid $81.5 million into the Nuclear Waste Fund.

I also understand that there was a prepayment of $156 million paid into that fund as well. Does that mean that the total amount of money that was paid into this fund by the ratepayers from TVA for 1985 was $175.4 million?

Mr. **Dean**. That is correct.

Mr. **Sanger**. That is about right.

Mr. **Boner**. Why were we asked to have this additional prepayment of $156 million?

Mr. **Sanger**. It was based on the burning of nuclear fuel prior to the time the Nuclear Waste Act was passed.

Mr. **Boner**. And of course the purpose of that, they are saying that those who utilize the fuel should pay for the storage of that fuel, wherever it should be, outside of Tennessee. One of the things I would like to ask you is that the nuclear facilities that TVA controls, do you have ample space to store your spent fuel there already?

Mr. **Dean**. We have space to store fuel for a considerable length of time. The situations vary among different utilities. I understand some are beginning to run short of storage, but we have enough to last us for probably about 10 years.

Mr. **Boner**. So you are saying that, the five plants——

Mr. **Dean**. We have five reactors licensed at this point in time.

Mr. **Boner**. And so you have ample storage, so if we were looking at it from a parochial point of view, the folks in the Tennessee

Valley Authority have made arrangements to see that storage space is ample at least for the next 10 years?

Mr. Dean. Yes, sir.

Mr. Boner. But we continue to pay into this fund?

Mr. Dean. Yes, sir, based on our nuclear generation. We are not paying much in today.

Mr. Boner. Right, I am aware of that. How would we equate that to the folks in Nashville? I know you divide it up into residential users and nonresidential users. I have got some figures here that I think you submitted to me. I want to make sure. Am I accurate in reading your figures here when you say that in 1984 every residential user of electricity paid $2.46 into that fund?

Mr. Dean. I am sure if our people gave you those numbers they are all right.

Mr. Boner. I got these from Ken.

The other thing I had a question about was as it relates to your nonresidential consumers. The answer I have says in fiscal year 1984 general power sales to nonresidential consumers was 4.5 billion kWh in the national service area. Their contribution at .275 mills kWh to the Nuclear Waste Fund was about $1,236,000. I assume that means that was the total for that year.

What I gather we are saying there then is that we are even now continuing to pay, even though it has diminished, into this Nuclear Waste Fund?

Mr. Dean. It is directly tied to nuclear generation.

Mr. Boner. Let me ask you this from your perspective. Do you think a monitored retrievable storage site is necessary?

Mr. Dean. I have not researched it to the point—all we have done at TVA is when we have been asked for information about our particular status, we have furnished that information to the Department of Energy. We have not tried to get into the technical aspects of intermediate storage versus permanent long-term storage. We haven't been asked to do those studies. And as far as I know, we haven't done any. Do you know anything, Mr. Willis, of that nature that we have done?

Mr. Willis. No. There are two ways you can go. You can wait and go directly to the ultimate repository or have a collecting mechanism through the monitored retrievable facility. Some utilities of course need that. We are in a position and we could probably wait. Technically, either one of the concepts is good and sound. Technically, from TVA's standpoint alone, we would not need to go through the retrieval facility.

We could wait because we have the storage capacity at each individual unit. So we have not taken any position on either side of where you ought to have it, because there are other utilities, and there are requirements that DOE has to meet that are beyond our requirement that prevents us from trying to make a determination.

Mr. Dean. Nor have we done any cost-benefit studies of any significance on that type.

Mr. Boner. Mr. Chairman, we obviously will be hearing from the Department of Energy about this. Needless to say, I have a great concern about it, and have many, many reservations about it being in Tennessee under any conditions whatsoever.

I would like to ask a couple of questions about the Columbia Dam, if I may, and I think you have alluded to these prior to this meeting. It is my understanding that TVA has said they will go and secure a 404 permit. Where are you in that process?

Mr. **Dean**. We have to start around the first of April, we are told by the Corps, in application for this renewal of the 404 permit. We intend to apply to renew the permit, and we will do that when the proper time comes, which I think will be about the first of April. By that time we will have finished about all activities that relate to the cost-benefit study that we did for OMB, and we will submit all that material and all the comments on it to OMB.

Mr. **Boner**. I appreciate the cooperative work that your people do, not only with our office but with the people in the Fifth District. I want to commend TVA. I am sure many of the folks are not aware of the various efforts that TVA has instituted to try to save and economize and conserve in the use of electricity in our area, from the Energy Saver Home Program to the Weatherization Program to the various heat pump options that I think TVA, within that area, has been a real model for other areas of the country to follow.

Mr. **Dean**. I might say, Mr. Boner, that one of the finest power distributors we have any dealings with is National Electric Service. They are very cooperative with TVA. They have been a leader in solar water heaters, for example.

Mr. **Boner**. Thank you. Thank you, Mr. Chairman.

Mr. **Bevill**. We will each have several questions that we will submit for the record.

Mr. **Myers**. Mr. Chairman, I have got a couple, if I may.

Mr. **Bevill**. All right, Mr. Myers.

Mr. **Myers**. I am still not sure about your nuclear program. You have five licensed?

Mr. **Dean**. Reactors, yes, sir. That is two sites, three at one and two at another.

Mr. **Myers**. That would include Browns Ferry and Sequoyah; that is two of the three?

Mr. **Dean**. Browns Ferry is three, Sequoyah is two. That is all we have licensed at this point.

Mr. **Myers**. When you have your problems solved with those two, you probably will go to licensing for Watts Bar?

Mr. **Dean**. Your question implies that they kind of come bing, bing, bing, bing. If we got everything straight at Watts Bar, pending matters, we could be applying for a license there even while we were doing other things at Browns Ferry.

Mr. **Myers**. Is construction complete at Watts Bar?

Mr. **Dean**. On Unit 1, it is essentially complete, yes, sir. It is complete on Unit 1.

Mr. **Myers**. How about Bellefonte; what is the progress there?

Mr. **Dean**. It has been purposely dragged out, deferred or delayed or whatever you want to call it. We don't need the power until up in the '90s, so we just slowed the construction down.

Mr. **Myers**. But you still intend to complete Bellefonte?

Mr. **Dean**. It is still under construction.

Mr. **Myers**. How many other sites do you have which are in construction but on which construction has been stopped?

Mr. **Dean**. That is it.

Mr. **Myers**. That is all of them?

Mr. **Dean**. That have been stopped, permanently stopped. We have got Phipps Bend up in eastern Tennessee, Yellow Creek in Mississippi, and Hartsville in middle Tennessee.

Mr. **Myers**. Those are all under construction?

Mr. **Dean**. They have been stopped permanently.

Mr. **Myers**. Construction had been started, though?

Mr. **Dean**. Yes, sir.

Mr. **Myers**. What percentage of completion were each of those in?

Mr. **Dean**. They ranged up to——

Mr. **Myers**. Would you name them and what percentage they are.

Mr. **Dean**. They have all been cancelled.

Mr. **Myers**. But there is some percentage of completion on those that have been cancelled?

Mr. **Dean**. We will supply it for the record because it would be different for each.

Mr. **Willis**. I think about 35 percent was the highest, 35 to 40 percent was the highest range, 20 to 35 or 40 percent range.

Mr. **Myers**. If you had a buyer, would you entertain any bid? I suppose you would be willing to take some big discount?

Mr. **Willis**. We have been looking for sale of the nuclear steam supply systems, and a couple of years back there were some possible opportunities, but those have gone away. We do not see the possibility of a buyer for any complete systems.

Mr. **Myers**. If there was one, though, you would be willing to take it?

Mr. **Dean**. Yes, sir. We had hopes of selling a couple of those a couple of years ago.

Mr. **Myers**. Where is Mr. Overseas? He has already left. He is our resident agent for finding overseas buyers. He is a great guy. He has some interest in his own region, in case you hadn't noticed it. If you can move one of those over there to Oklahoma, you may not get it there, Bill.

Mr. **Boner**. Wes will take anything that you give him, and I have got an MRS that I am trying to sell him right now.

Mr. **Myers**. A rather good bridge. Again, in your consolidated statement that you provided—and I thank you for it—you have a bond retirement in decommissioning funds you are requesting this next year for $723 million. How much of that is decommissioning? I take it is decommissioning of nuclear?

Mr. **Dean**. Yes, sir. There is money set aside for decommissioning of operating plants at the end of their service life, which is usually about 30 years.

Mr. **Myers**. That is what you call a bond retirement, then. It is not a bond retirement. It is a plant retirement, then, rather than decommissioning. It is reserve, then. You consider this a reserve account?

Mr. **Durall**. There are actual securities that we are purchasing, basically zero coupon bonds, and holding, number one, to have cash to decommission nuclear plants at the end of their lives, and two, to pay off the bonded indebtedness on the cancelled nuclear plants, $4.5 billion.

Mr. MYERS. Your deferred charges, you have unamortized investment in canceled nuclear units, and last year you showed that to be $2,627,608,000. I believe you said that you had an investment of $4 billion in those plants, so the difference between $4 billion and $2.4 billion, has that been already amortized? Is that what you are saying?

Mr. DURALL. When we had the cancellations initially in 1982 and 1984 in sum total we took a charge in those two years, $400 million in 1982, the first installation, against current income in that year, $800 million in 1984 against 1984 income, which reduced it from 4.5 to 3.3, and then the 1982, 1983, 1984 and 1985 amortizations have added together to reduce it by approximately another $700 million.

Mr. MYERS. That is what you have it on the books for now, $2 billion?

Mr. DURALL. That is the balance, the unamortized balance.

Mr. MYERS. And that is the five units that you have canceled?

Mr. DEAN. No, sir, there are eight units.

Mr. DURALL. There are eight of them.

Mr. MYERS. You started only five of them, didn't you?

Mr. DURALL. We started all of them.

Mr. DEAN. Eight reactors.

Mr. MYERS. I am sorry I asked. That is a pretty good hunk of money, isn't it?

Mr. DEAN. Yes, sir.

Mr. MYERS. My last question, back to Land Between the Lakes. That is held in title by the Tennessee Valley Authority or the United States of America?

Mr. SANGER. For real estate under our act, we take title to real estate in the name of the United States. We have custody of it.

Mr. MYERS. You have custody of it?

Mr. SANGER. The legal title is in the United States.

Mr. MYERS. Then there is no real estate property tax paid in those counties where that land would be situated?

Mr. SANGER. That is correct.

Mr. MYERS. Do you pay in lieu of taxes for support of local obligations?

Mr. SANGER. In our power program we pay a rather substantial amount of tax.

Mr. MYERS. Where would that show up in your statement? How much is that? Can you provide it for the record, what those are in lieu of?

Mr. SANGER. Yes. They are substantial. For example, last year in the State of Tennessee and for a good number of years we are the biggest taxpayer in the state.

Mr. MYERS. For the record, if you would, though, in the Land Between the Lakes, what you are paying now in lieu of taxes to local governments, state and local.

Mr. DEAN. That would be power. LBL is not in power funds.

Mr. MYERS. Just what it is costing you. Where does it come from, then, if it is not power?

Mr. DEAN. LBL is operated with appropriated funds and would not be paying taxes itself.

Mr. **Myers**. In the request here, I wondered where that was in here, so if you would tell us what it is.

Mr. **Sanger**. We will explain that and the difference, yes.

[The information follows:]

IN-LIEU-OF-TAX-PAYMENTS

In-lieu-of-tax payments for the Commonwealth of Kentucky totaled $12.4 million in 1985. TVA makes such payments for the power program only. The distribution is based on power sales and power properties in each State.

Mr. **Myers**. Thank you, Mr. Chairman.

Mr. **Bevill**. As you can see, this committee is very interested in what you are trying to do. We realize the problems you are facing, and we hope that you won't hesitate to call on us if there is something there that we can do to help you carry out your goals of getting the TVA back on track.

Mr. **Dean**. Thank you, Mr. Chairman, and we appreciate your time and the fact that we have been able to talk about, certainly, a wide range of projects today. We appreciate the opportunity to do that.

Mr. **Bevill**. This committee stands adjourned until 10 o'clock in the morning.

[The following questions and answers were provided for the record:]

Program Overview

2. Mr. Bevill: The Administration has proposed to "privatize" or sell off the Power Marketing Administrations of the Department of Energy. Was the TVA Board ever asked to consider privatization of TVA? What is your opinion of this idea?

Mr. Dean: The TVA Board has not been asked to consider the privatization of the TVA power program. However, we consider it a very poor idea. We arrive at this position based on the two basic points:

1. Would the Tennessee Valley citizens be better off? We believe not. Rates would be higher, and many of the same problems would still exist.

2. Would the Nation's taxpayers be better off? Again, we believe not. The taxpayers would lose the national demonstration character of TVA which is, after all, one of the basic reasons for which it exists. In addition, the Treasury would lose the payments which currently equal or exceed the amount of appropriations and the fertilizer and agricultural research programs.

Attached is a paper we have prepared analyzing the recent Heritage Foundation study regarding selling the PMAs and TVA.

THE RATE IMPACT IMPLICIT IN THE HERITAGE FOUNDATION STUDY OF SELLING THE TVA POWER SYSTEM

The Heritage Foundation study by Senior Policy Analyst Milton Copulos incorrectly asserts that selling the TVA power system would:

1. Yield significant long-term benefits to the consumers of TVA-generated power through greater efficiency and accountability.

2. Help solve the deficit problem by raising $62 billion—even after all debts from revenue bonds were repaid.

An initial review of the study as it relates to TVA indicates both these conclusions are false. The $62 billion price tag for the TVA power system meets neither the test of financial common sense nor of protecting the public interest. Determining the market value of TVA involves not only complex financial and accounting questions, but fundamental legislative and regulatory uncertainties. There is no way to value TVA's power assets without knowing how the output produced by those assets would be priced, i.e., how rates for a "privatized" TVA would be set. Thus, the amount that the Treasury would realize is problematical at best, and in any event would be a one-shot affair that would not change the basic economic problems caused by the Federal deficit in a beneficial way.

* * * * *

In this paper, we deal primarily with the interrelated issues of whether the sale price for the TVA power system established in the Heritage study makes financial sense and the magnitude of the rate impact on TVA's customers that is implicit in it.

1. The rate imapct of the sale of the TVA power system for $62 billion would be cataclysmic. The structure of the sale as proposed in the Heritage Foundation study is all equity financing scheduled in two phases: an initial offering of 51 percent of the value of the agency's assets with the Government retaining a 49 percent share to be sold at a later date.

   - o The net increase in TVA power program revenue requirements that would follow the initial 51 percent offering would be $4.71 billion, approximately a 104 percent increase. This assumes, of course, that the Government would be willing to forego any dividends on its 49 percent equity.

   - o This first stage along would raise TVA consumer average current monthly residential bills of about $50 for 1,000 kWh to about $95.

   - o As the second phase of the proposed offering went into effect, revenue requirements would increase another $4.74 billion. This also assumes that the first issue maintained its initial value, keeping in mind that in order for the shares in the first issue to retain their value, rates would have had to more than double, and a significant number of TVA's customers would not have left the system to obtain cheaper power elsewhere.

   - o The combined impact for the two phases of the sale as proposed by the Heritage Foundation would be to raise revenue requirements by $9.45 billion, leading to a 208 percent increase in electric rates.

   - o Translating this into an increase in the average annual residential bill means the current $720 per year would almost triple to about $1,950 per year.

   - o Moreover, a sale of TVA would mean that the Treasury would lose the more than $100 million in interest and dividend income it earns from

TVA ratepayers each year. Each year TVA pays the Treasury a dividend on the equity the taxpayers have invested in the power system. In fiscal year 1985 this payment was $97 million. In addition, the Treasury earns a profit on the loans the Federal Financing Bank makes to TVA. In fiscal year 1985 this profit was $20 million.

o This proposal would give the Tennessee Valley the highest electric rates in the Southeast by a large margin (they are now among the lowest). Of the major U.S. cities only New York City would have higher electric rates.

o Moreover, as their contracts with TVA expired, many TVA customers, particularly industrial consumers, would try to leave the system in order to buy the now much cheaper power available from contiguous utility systems. Such a loss in major consumes would, in turn, drive up TVA's rates even further as the higher revenue requirements had to be spread over fewer and fewer ratepayers.

o The derivation of this rate impact is shown in table 1. We have used very conservative assumptions as to interest rates and required rates of return. In reality, a substantial "risk premium" would be demanded by the financial markets for the sort of transaction outlined in the study—increasing the impact substantially.

Table 1

Revenue Requirement Impact of TVA Sale: Heritage Foundation Plan

Assumptions:

—Sale price	$62 billion
——Financed in two stages by new shares earning the average rate of return in utility industry of 15.6 percent	

- -

MAJOR CHANGES IN TVA'S REVENUE REQUIREMENTS

Decreases (In Billions of Dollars		Increases (In Billions of Dollars	
Phase I:			
Long-term interest	-$1.55	Return on equity (51 percent of $62 billion at 15.6 percent)	$4.93
Repayment to Treasury	-0.12	Increase in depreciation	1.78
Increase in retained earnings	-0.33		
Phase I decreases	-2.00	Phase I increases	6.71
		Net increase phase I:	4.71
		Current revenue requirements	4.55
Percent change		104 percent	
Phase II:			
		Return on equity (49 percent of $62 billion at 15.6 percent)	4.74
Total decrease phases I & II	2.00	Total increase Phases I & II	11.45
		Net increase phases I& II	9.45
		Current revenue requirements	4.55
Percent change		208 percent	

2. Aside from the rate implications, the sheer magnitude of the proposed stock offering is so much larger than any previous sale that it makes any prediction of its yield an excercise in conjecture.

   o The largest previous stock offering was British Telecom in 1984—about $6 billion, but this offering was spread through Europe and Japan as well as the United States.

   o The largest stock offering made in the U.S. was a $1.17 billion sale of AT&T shares in 1983.

   o The proposed sale would also yield a very significant fee for the investment bankers undewriting the sale. Assuming a typical fee spread of 5 percent of the aggregate proceeds for stock offerings: The all equity approach advocated by the Heritage Foundation would result in underwriting fees of $3.1 billion. To put this in perspective, under the Heritage Foundation plan the fees paid to the bankers handling the transaction would exceed the Federal Government's current equity investment in the TVA power system.

* * * * *

Numbers and rate impacts of this magnitude may seem unrealistically large—and in our opinion clearly they are—however, they are also logically implicit in the study's claim that TVA could be sold for $62 billion.

Another way to say the same thing is, that in order for rational investors to be willing to pay $62 billion for TVA, they would have to be assured that whoever would have the authority to set rates in the event of such a sale would be willing and able to triple the rates paid by TVA's customers.

Thus it appears that the Heritage Foundation's basic conclusions fail rather badly a basic test of financial and political reductio ad absurdum.

Program Overview

3. Mr. Bevill: How has the absence of nuclear power generating capacity affected the overall TVA electric power program?

Mr. Dean: As our forecasts last fall indicated, we have come through most of the winter with ample power and through the worst of it with only minor peak shaving. Most of the generation shortfall from the nuclear plants has been replaced by additional generation from our coal-fired plants, supplemented with economy purchases at very good prices throughout the winter. The coal-fired generation for the ten-month period ending January 1986 was about 14,000 MWh (25 percent) greater than for the same period a year ago. The coal-fired system has performed extremely well during this period. All of the major reliability and efficiency measures for our coal-fired system have held steady or improved, with the system forced outage rate improving from 11.8 percent to 9.5 percent and average heat rate improving from 9990 Btu/KWh to 9960 Btu/KWh. In short, while there has been some increase in cost due to the lack of nuclear generation, TVA has maintained its high level of service to its customers.

Program Overview

4. Mr. Bevill: What is the status of the nuclear power program?

Mr. Dean: Questions regarding the adequacy of design and construction have caused TVA to shutdown all five licensed units until all safety questions are resolved. Other questions are delaying the licensing of Watts Bar Unit 1 which is fully constructed. Watts Bar Unit 2 is nearing completion, and Bellefonte Units 1 and 2 in Alabama are being constructed at a reduced pace with completion set for the early and mid-1990's.

Many of the current difficulties resulted from alleged poor management practices and a resulting lack of trust by workers that they could openly identify problems to management. This in effect compounded the resolution of problems because in many cases issues were not identified until after construction was completed and the historical documents and/or people who worked on the jobs were not immediately available.

The new Manager of Nuclear Power, Steven White, is taking the steps to build a strong, effective management team. He has brought in a new Manager of Engineering, a new Manager of Construction, à new Manager of Quality Assurance, a new Manager of Licensing, and others. He has plans to have these new managers train their permanent TVA-employee replacements over the next two years.

He also has a team of people putting together responsibility and accountability profiles in order to establish clear lines of responsibility, authority, and accountability.

Soon after he reported to TVA, Mr. White directed development of an employee concern program under which employees, while urged to take their concerns to their supervisors, can take concerns to an employee concern representative. An independent employee concern representative is located at each major Office of Nuclear Power work location. These representatives report to the employee concern program manager. This process assures that their concerns are promptly identified and resolved. This program is a management tool to rebuild the trust and confidence between workers and supervisors throughout the organization. This mutual respect and confidence is essential, and the word has gone out from Mr. White that employee concerns will be respected and intimidation and harassment of employees will not be tolerated.

Other major activities are just getting underway. For example, an effort has recently been initiated to rewrite policy and directives to reflect the new organization and to define the relationships between the organizational entities, especially between the corporate office and the sites.

Another example is that a budget and procurement specialist has been brought in to examine activities in these two areas and to ensure TVA is following fiscally sound practices.

Plant management is working to resolve the more technical issues, such as environmental qualification of equipment, the quality of welding, and documenting design bases for various systems. These issues are difficult to sort and investigate. When a concern is identified at one plant an evaluation is required to determine if that concern applies to any of the other plants. Because TVA is still investigating concerns for their significance to plant safety, it has been impossible to develop a schedule for getting the plants into operation.

Program Overview

5. Mr. Bevill: When will TVA begin and finish bringing the nuclear plants back on line?

Mr. Dean: We will not know until we have evaluated all of the currently identified concerns and determined if they are valid, what the corrective action should be, and if the corrective action has to be taken prior to bringing the affected unit(s) back online.

TVA will not return any of the units to service until the Office of Nuclear Power, the Board, and the NRC are satisfied that they are safe to operate. As the nuclear program is still in the process of being analyzed, no schedule exists at this time. TVA will, of course, inform Congress and the NRC as soon as a sched- ule is established. The current order of priority to bring the plant back on line is Sequoyah, Browns Ferry, and Watts Bar.

Program Overview

6. Mr. Bevill: The fiscal year 1987 budget proposal once again proposes to eliminate much of TVA's nonpower programs. What is different about the 1987 budget request?

Mr. Dean: The fiscal year 1986 and 1987 OMB budget passbacks are contrasted in the attached table. It reveals that a total of nine TVA programs were totally eliminated in the fiscal year 1986 passback and that key elements of other programs were not funded.

Programs totally eliminated in OMB's passback for fiscal year 1986:

o Water resources – regional water management, reservoir releases improvements, and fisheries resources development.

o Land and forest resources – recreation facilities, forest resources, wildlife resources, and environmental/energy education.

o Land Between The Lakes – the Nation's only outdoor laboratory which combines recreation, environmental education, and land stewardship to demonstrate the benefits of managing public lands.

o Economic resources – navigation development, economic development and analysis, minority economic development, special opportunities counties and cities, and skills development.

- o Community development - community preparedness, Townlift, regional waste and water supply, and floodplain management.

- o Valley agricultural development - family farms, high-income enterprises on small farms, market development, preserving farmland productivity, and nutrients from animal wastes.

- o Fertilizer technology development - products and processes research and testing, and production of experimental fertilizers.

- o Chemical facilities - major research, development, and demonstration facilities to augment the national fertilizer development program.

- o Hardwood fuels research - pilot plant construction of a facility to produce ethanol from hardwoods, and process improvement research toward economic feasibility.

- o Regional air management and acidic precipitation - activities within a program which were also eliminated in the OMB passback.

The programs which were only partially restored in the fiscal year 1987 OMB passback include:

- o Water resources
- o Land and forest resources
- o Fertilizer introduction
- o Chemical facilities

Tennessee Valley Authority

OMB Budget Passback
(By Programs)

	Budget Authority (In thousands)	
	1986	1987
Natural resources	26,399	31,003
Reservoir system operations	(18,363)	(20,593)
Water resources	–	(3,500)
Dam safety modifications	(4,570)	(2,610)
Additions and improvements	(1,516)	(1,500)
Land and forest resources	–	(550)
Land Between The Lakes	–	–
Resource management and development support	(1,950)	(2,250)
Economic and community development	–	–
Economic development	–	–
Community development	–	–
Valley agricultural development	–	–
General services	2,206	2,000
National fertilizer demonstration	10,000	25,035
Fertilizer R&D	(10,000)	(10,430)
Fertilizer introduction	–	(10,205)
Ammonia from coal	–	–
Chemical facilities	–	(4,400)
Hardwood fuels research	–	–
Total nonpower program	38,605	58,038

Program Overview

7. **Mr. Bevill**: What would TVA do with additional funding in fiscal year 1987?

Mr. Dean: TVA's responsibilities with the broadest national significance must necessarily be of the highest priority. The best example of this is the ongoing work in fertilizer development where TVA research serves not only a national but an international need. While TVA is putting a great deal of effort into increasing the level of non-Federal support for this program—currently averaging over $20 million per year—it is ironic that the proposed cutbacks will make it more difficult to secure the additional cost-sharing arrangements the Administration favors.

Of equal significance would be to ensure that TVA carries out its stewardship trust for those lands, waters, and facilities under its direct management in a manner that is safe and that preserves their long-term return on the taxpayers' investment. This would include activities that reflect innovative and cost-effective alternatives to existing management methods.

TVA rural and resource development activities that most strongly incorporate the TVA concepts of partnership and national demonstration must also be preserved in order that the Valley region's resources—human and natural—can fulfill their potential as full participants in the Nation's growth.

The specific program mixture of TVA initiatives at any particular budget level will always bear a certain resemblance to the pres- ent TVA agenda. This is inevitable because the distinguishing characteristic of TVA as a governmental entity is the integrated approach to problemsolving. It has been our experience that the greatest benefit and greatest potential for future relevance of TVA programs to the Federal taxpayer and Valley citizen follows from that commitment.

Program Overview

8. Mr. Bevill: The FY 1986 Energy and Water Development Appropriation Act contained a provision requiring that certain high voltage electrical equipment be purchased under "Buy American" criteria. What has TVA done to implement this statutory provision and what has the experience been with it?

Mr. Dean: Proposed revisions (copy attached) to the TVA Procurement Manual have been prepared which explain the requirements of this provision (section 506 of Public Law No. 99-141). TVA has also prepared a provision (copy attached) for inclusion in any TVA invitation for bids for EHV power equipment that is subject to this 25-percent differential. This provision follows the definition of EHV power equipment that is set forth in the conference report on H.R. 2959 (which was enacted as Public Law No. 99-141).

TVA has not completed any procurements of EHV power equipment in which the 25-percent differential was applicable. However, TVA has issued one invitation for bids for capacitors in which the 25-percent differential will be applied to any bids involving foreign-made equipment. Since bids will not be opened in connec- tion with this procurement until March 11, we are not able to describe the effect of this first use of the 25-percent differential at this time.

We also anticipate that other procurements may be initiated during fiscal year 1986 which will include the 25-percent differential, including an invitation that will probably be issued in March 1986, for bids for two, and perhaps as many as six, EHV power transformers.

Program Overview

9. Mr. Bevill: What has been the reaction among TVA employees to the creation of an Office of Inspector General? What has he done so far?

Mr. Dean: TVA employees' reaction to the creation of the Office of the Inspector General (IG) has been favorable. Employees have commented that they were hopeful the IG's Office would assist in enhancing the good reputation TVA has generally experienced over the years and in providing a reliable channel for voicing employee and public concerns.

Since his arrival on January 27, 1986, the IG has been involved in many activities. These include:

- Meeting and briefing all TVA office managers. Established procedures for interaction between their offices and the IG's office.
- Presently conducting interviews in order to staff the various positions within the IG's office. Thus far, the IG's secretary has been selected; his Assistant for auditing will report on March 12, 1986; one investigator is on board and four others will report by the end of March. This process is continuing.
- Established with the Office of the General Counsel (OGC) a transition procedure for taking over investigative complaints previously referred to OGC.

- Presently acquiring data processing equipment for the IG's office.
- Designing space for offices and administrative support services.
- Establishing an investigative classification and filing system.
- Establishing investigative manuals as well as rules and procedures for the IG's office.
- Establishing a Hotline for the IG's office, which became operational on February 26, 1986. A press conference was held informing the public and TVA employees of the Hotline's purpose and making available to them the telephone numbers to call in the event they wish to register a concern. Two employees on temporary assignment presently answer the Hotline. These posi- tions are expected to be filled permanently in the immediate future.
- Meeting with GAO officials regarding the establishment of its independent IG office.
- Meeting with individual members of the Valley congressional delegation to provide a progress report on the establishment of the independent IG office in TVA.
- Reviewing numerous complaints to establish priorities and institute appropriate investigations.
- Reviewing proposed legislation relating to "whistleblowers" as well as TVA policy on confidentiality of persons making allegations.

Program Overview

10. Mr. Bevill: What consideration is TVA giving to expanding cooperative regional development efforts that would utilize public and private sector shared investment?

Mr. Dean: Shared responsibilities have been a guiding tenent of TVA involvement in local, State, and regional development efforts throughout the agency's history. By design, TVA was headquartered in the Valley—to work directly with the people it serves. Cooperative agreements have always been made with a wide range of public agencies, all levels of government, and with private parties. Participants in these agreements include various arms of the States; dozens of cities and counties; TVA power distributors; a wide array of Federal agencies; conservation, environmental, and sportsmans' organizations; numerous private groups; and educational institutions. In 1986 alone, TVA is participating in hundreds of cooperative agreements. These agreements pertain to a wide assortment of actions: job creation; recreation, wildlife, and forestry development; land reclamation; industrial expansions; waste management; water quality control; the effects of acidic deposition; and numerous other areas.

This commitment to a shared responsibility for regional growth through cost sharing and the cooperative use of public and private investment is even stronger today. Examples of TVA's increased efforts to make programs even more responsive to cooperative solutions include:

Regional Water Management

In 1980 there were no explicit cost-sharing initiatives or cooperative incorporated into the water quality program activities of TVA. In the past few years, there has been a significant change.

- Tennessee Drought Study—Tennessee Department of Health and Environment, U.S. Geological Survey, U.S. Army Corps of Engineers, and TVA.

- Alabama Drought Study—Alabama Geological Survey and TVA.

- Kentucky Drought Study—Kentucky Division of Water, U.S. Geological Survey, and TVA.

- Douglas Tailwater Study—Tennessee Wildlife Resources Agency, Tennessee Division of Water Pollution Control, and TVA.

- Memorandum of Understanding—Tennessee Office of Water Management and TVA.

- Land and Water 201 Programs—Food and agricultural councils of each Valley State, Soil Conservation Service of each Valley State, water pollution control agency for each Valley State, the Environmental Protection Agency (EPA), and TVA.

- Norris Tailwater Trout Fishery—Tennessee Wildlife Resources Agency, Trout Unlimited, and TVA.

- Kingsport Water "Bubble"—Tennessee Division of Water Pollution Control, Tennessee Eastman Company, Mead Paper Company, Kingsport, TN, EPA, Holston Army Ammunition Plant, and TVA.

The following cost sharing initiatives were initiated during this period.

- Bear Creek Floatway—Landowners, Soil Conservation Service (SCS), Agricultural Stabilization and Conservation Service (ASCS), Auburn University, and TVA.

- Duck River Animal Waste Management Project—Landowners, SCS, ASCS, and TVA.

- Middle Fork Holston River Nonpoint Source Correction Project— Landowners, SCS, ASCS, and TVA.

- Artifical Wetlands Demonstrations—Pembroke, Hardin, and Benton, Kentucky; Kentucky Division of Water, and TVA.

- ANFLOW Demonstration—Haleyville, Alabama, ANFLOW INC., Martin-Merrietta, ARC, and TVA.

- Copper Basin Reclamation—Tennessee Chemical Company; Fannin County, Georgia: SCS; and TVA.

- Mica/Feldspar Abandoned Mine Reclamation at Spruce Pine, North Carolina—Landowners, mine owners, State of North Carolina, and TVA.

- Abandoned Manganese Mine Reclamation—U.S. Forest Service, landowners, and TVA.

- Abandoned Phosphate Mine Reclamation—Landowner, SCS, and TVA.

- Clinch and Powell River Protection Project—State Governments of Tennessee and Virginia, and TVA (other Federal and local agencies may be brought in at a later date).

- Guntersville Reservoir Water Quality Management Plan Implementation--Alabama Department of Environmental Management, SCS, ASCS, landowners, and TVA.

- Ft. Loudoun Reservoir Water Quality Management Plan Implementation—Tennessee Division of Water Pollution Control and TVA.

- Hamilton County Model Landfill—Hamilton County Tennessee and TVA.

- Bacteriological Sampling of Ocoee No. 1 Reservoir—U.S. Forest Service and TVA.

- Piney River Instream Flow Study—Dickson, Tennessee; Tennessee Office of Water Management; U.S. Geological Survey; and TVA.

- Waste Assimilative Capacity in Beech River—Lexington, Tennessee,. and TVA.

- First Tennessee Development District Groundwater Demonstration—First Tennessee Development District, Tennessee Division of Water Pollution Control, Utility District, and TVA.

- Student Water Quality Sampling Program—10 teachers from 10 school systems within the region, 20 high school students, and TVA.

- Acid Rain Aquatic Effects Study—EPRI, Oak Ridge National Laboratory, University of Georgia, EPA, and TVA.

- McMinn County Groundwater Demonstration—FFA and 4-H Clubs, McMinn County Government, and TVA.

- Madison County Groundwater Demonstration—Huntsville, Alabama, Madison County Health Department, Utility Districts, and TVA.

Floodplain Management

Cost-sharing in the floodplain management program has increased significantly since 1980. In providing technical information and engineering assistance to community officials and private decisionmakers, those requesting assistance are generally required by TVA to provide local data and mapping needed for investigations and analyses.

For example, in special investigations for flood damage reduction at Huntsville, Alabama, and Maryville, Tennessee, city employees and local firms hired by the cities collected most of the extensive field data needed and provided maps which identified projected future development. These items were obtained at substantial local cost and enabled the limited TVA resources to be spread across more communities needing assistance.

Reservoir Land Management

- Timber operations—In fiscal year 1980 we recieved $108,000 from the sale of forest products and in fiscal year 1985 we received $150,000.

- Administration of Lands and Section 26a—Since 1980 we have implemented increased standard minimum fees for commercial/industrial, private, and other revocable land use agreements. In 1980 we collected $47,000 from miscellaneous land use agreements and in 1985 we received $189,000.

- Administrative Cost Recovery—In 1983 TVA instituted a policy of recovering certain administrative costs associated with reservoir land transactions and violations and encroachment actions. In the two years of full implementation of cost recovery, $75,000 has been recovered.

Recreation Resources Program

- In 1980 TVA managed 12 fee campgrounds on it's reservoir shorelines and collected almost $46,500 in revenue. In 1985, 28 fee campgrounds were managed directly by TVA with over $167,000 collected in revenue. The base charge per campsite of $4 in 1980 has since been raised to $6.

- In 1980 there were no cooperative agreements in place to help manage TVA-developed reservoir recreation areas. Currently a total of 12 recreation areas are operated under a variety of cooperative agreements that yield net annual operation and maintenance savings to TVA of about $160,000. The agreements include three commercial licenses, two personal service concession contracts, four cooperative letter agreements, two land use permit-license agreements, and one volunteer arrangement.

- Since 1980 TVA has transferred total responsibility for 14 reservoir recreation areas, representing a facilities investment of $1,680,000, to a local development agency (Tellico Reservoir Development Agency) for an estimated annual operation and maintenance savings of about $200,000.

- Through 1980 TVA had acquired 53 stream access sites, 25 of which were maintained by other agencies. A total of 84 sites have now been acquired with 54 developed sites being maintained by other public agencies.

Wildlife Resources Development Program

- Since 1980 cooperative agreements have been established with some 10 conservation or sportsmans' organizations which provide labor to improve stewardship on TVA lands. About $90,000 has been saved in labor costs over the five-year period.

- A new cost-sharing agreement with the Tennessee Wildlife Resources Agency (TWRA) has been developed for operation of dewatering areas in Tennessee. Starting in 1986 TWRA will pay a larger share of the electrical costs and conduct a portion of the maintenance activities for a total savings to TVA of up to $20,000 per year.

Forest Resources Development Program

- In 1980 TVA provided all personnel and funding necessary to survey the Valley's wood industry situation. Now, TVA and State forestry agencies throughout the Valley share in updating industry data. State foresters do much of the door-to-door field data collection while TVA concentrates on processing and analyzing data and projecting trends in this important industry.

- Through 1980 TVA relied exclusively on data obtained from its own permanent forest inventory plot system, which was established throughout the Valley, for all timber resource information. Since then, TVA and the United States Forest Service have cooperated in both the field data collection work and the sharing of all plot data needed for analysis.

- In 1980 TVA maintained genetically improved trees in seed orchards throughout the Valley for tree improvement research and seed production. TVA now has agreements for the State forestry agencies to maintain the orchards in return for seed which is needed for their State nurseries.

Environmental/Energy Education

- In 1980 the University network of centers for environmental/energy education consisted of six universities, each receiving $20,000 from TVA.

- Today, all six of these centers are self-supporting, and any funds received from TVA are for only contracted products. This strategy is being used to form a self-supporting network that will include 17 major institutions.

Land Between The Lakes

- New fee structures for annual hunter permits, interpretative programs and tours, and The Homeplace-1850 have been implemented, generating over $290,000 in new revenues.

- Family camping and group camping fees at LBL have been periodically evaluated and increased, generating $445,000 in additional revenues.

- Total income at LBL has increased from $744,000 during fiscal year 1980 to a projected $1,434,000 in fiscal year 1986, a 93 percent increase.

- Contingent on revisions of the Land and Water Conservation Act, other new fee structures have been explored to further help defray maintenance and operations cost.

- Over 130 cooperative agreements with other Federal, State, local, and private organizations will be implemented during fiscal year 1986 as compared to less than 50 during fiscal year 1980. These agreements range from water safety training seminars sponsored by TVA, The National Water Safety Congress, Tennessee Recreation and Parks Association, Tennessee Department of Conservation, University of Tennessee, and the American Red Cross; to a joint TVA/U.S. Fish and Wildlife Service/Tennessee Wildlife Resources Agency/Tennessee Conservation League effort to restore nesting bald eagles to the LBL region.

  Eagle Trust International, a nonprofit organization, will begin operation at LBL in 1986. Together, TVA and Eagle Trust will improve and expand the eagle propagation effort throughout the southeastern United States.

- LBL will implement a leadership training program during fiscal year 1986. This new demonstration in education will provide one-year professionals a "hands-on" training experience in their field of study. Through this program new ideas and techniques will be injected into the numerous programs offered at LBL. The number and quality of programs will also increase due to this new assistance to existing staff.

- Through an estimated $75,000 in donations and volunteer work coordinated by the LBL Association during 1985, LBL will operate a new observatory at the Golden Pond Visitor Center and an eagle breeding facility at the Wildlife Restoration Center. Over 2,000 visitors participated in special programs at the observatory during its first 2-1/2 months of operation.

- Over 100 volunteer members of the LBL Association will contribute about five man-years of assistance in fiscal year 1986 to supplement LBL staff in the conduct of numerous interpretation, education, and natural resource programs.

- The U.S. Department of Agriculture has contributed about $465,000 for cooperative tick research at LBL since fiscal year 1984.

Special Opportunities Counties and Cities (SOCC)

- In 1980 the SOCC program worked in only eight Valley counties, mainly in Tennessee. Today the program covers the Valley's 50 poorest counties in the seven Valley States.

- In 1980 SOCC program funds were provided directly to project implementation with no provision for recovery. Today project funds are used for financing job creation projects in a way that allows for repayment and reuse of the funds.

- In 1980 SOCC program funds were often the only source of financing for a given project. Today a prerequisite of the program is to have multiple partners, especially from the private sector, supporting a project. This leveraging requirement has resulted in development of more projects and a job-to-dollar ratio of about one job for every $3,000 of SOCC money invested.

- In 1980 the SOCC program had only 15 cooperative agreements in place. Today 56 are in force with local units of government throughout the TVA region.

Existing Industries Program

- TVA did not have an existing industries program in 1980; however, today we provide a wide range of technical services to help plant managers lower their operating costs and plan for new expansions, in concert with State and local agencies throughout the Valley.

- TVA also has a cooperative agreement with its power distributors to identify prospective existing industries program clients.

Economic Technical Assistance Program

- In 1980 the majority of TVA expenditures were in support of public sector clients, such as local governments, State agencies, and public universities. In 1985 over 80 percent of TVA expenditures were in support of private sector initiatives or public/private sector partnerships. Increased TVA involvement with the private sector has resulted in a marked increase in the ratio of outside investment per TVA dollar expended, thus increasing the efficiency and effectiveness of TVA programs. Benefit/cost ratios of 15:1 were not unusual in 1985.

- In the 1982-84 period, local economic development strategies initiated by TVA achieved a minimum return of 16:1 on TVA's technical assistance investment. All projects were undertaken with the cooperation of State and local governments and community volunteers and are currently being operated by local organizations. In Bristol, Tennessee/Virginia, for example, a TVA technical assistance investment of about $10,000 has led to establishment of a locally operated development program which has raised over $1,250,000 in local funds. Similarly, in Tippah County, Mississippi, a TVA-assisted economic development strategy has led to the hiring of a local developer and a drive to raise private funds to support the local economic development program.

- Building on the agency's success in working with the local public and private sectors and community volunteers to create jobs, has initiated a new program to train its 160 power distributors located throughout the Valley to play leadership roles in organizing and carrying out local economic development activities. This new cooperative relationship will mobilize a relatively untapped resource (the distributors) in support of economic development.

- In 1980 TVA did not use the services of private volunteer organizations to reduce the cost of program delivery. In 1984 TVA entered into a cooperative agreement with Bicentennial Volunteers, Incorporated (BVI), a volunteer organization. In 1985 BVI volunteers worked 12,825 hours on various projects in cooperation with TVA, including economic development, agriculture, energy conservation, visitor reception, and recreation. By engaging in these various activities which further many of TVA's interests in the Tennessee Valley, the region benefits from the efforts of these individuals without requiring substantial expenditures by TVA.

- In 1980 TVA had no formalized agreements with State governments to set forth our working relationships with the States in the area of economic development. In 1982 TVA executed cooperative economic development agreements with all seven Valley States. Through these agreements, TVA is able to avoid duplication of State efforts, and to jointly direct resources toward problems and opportunities of special concern to the States.

Skills Development

- Over the past three years, our research has shown that for every $1 invested by TVA and the skills development programs, the Federal Government receives $7 in taxes due to employment as well as a direct reduction in Federal expenditures for unemployment benefits, welfare, and other social expenditures. This compares to a $3 return in 1980.

- Current TVA training activities result in a contribution from private and public sector of $5 for every $1 supplied by TVA. This compares to a 2 to 1 ratio in 1980.

Cooperative agreements have been expanded to all seven Valley States as compared to two States in 1980.

TVA also recognizes the multiple purposes that major research and development projects can serve. Hardwood fuels research and development of an ethanol-producing pilot plant has reached the potential for completion in 1987. TVA has undertaken initiatives with the private sector that would cooperatively fund the operation and testing of the pilot plant if completed as a further step in assessing the commercial feasibility of TVA's research. Basic and applied research such as TVA has undertaken is also important in that it serves to meet multiple objectives of development processes that capitalize on underutilized regional resources, respond to a national need for substitutes for lead as a gasoline octane enhancer, and create crop alternatives for marginal lands where current farming practices result in massive soil erosion with resulting environmental damage and economic losses.

Another current major project is TVA's construction of a demonstration-scale, 160-MW atmospheric fluidized-bed combustion (AFBC) steam generation unit at its Shawnee Steam Plant. As the AFBC technology allows the use of high-sulfur coal without flue gas desulfurization, it shows promise of being less expensive than conventional coal-fired generating stations with scrubbers. This should be of great benefit to the Appalachian region, which has suffered from declining markets for its abundant high-sulfur coal. The potential benefits are so great that there is tremendous interest from other groups. Of the $236,400,000 pledged to design, construct, and test this facility, over 80 percent is to be provided by parties other than TVA. These include the Commonwealth of Kentucky, EPRI, Duke Power Company, Combustion Engineering, and many others. While the AFBC project is clearly an effort of national consequence, TVA has also been able to site the effort in an area of rural southwest Kentucky, where the additional jobs have been critical to the local economy.

Fiscal Year 1987 Budget Request

11. Mr. Bevill: What, in general terms, would be the impact on the Tennessee Valley region if the TVA budget was left at the recommended level?

Mr. Dean: TVA designs all its programs to work in partnership with private and other public agents whenever possible. This approach allows TVA to maximize it's resources and to transfer capabilities to other public and private institutions to be the primary implemen- tors of solutions. This means TVA's total program is, by design, quite small and necessarily dynamic.

But TVA must have the resources to put this knowledge and expertise to work. If we do not have the necessary funds, we fear additonal erosion of the already lagging economic levels of the Tennessee Valley region would place many valley citizens even further behind the national average than they are already. The natural resource base of the Valley would also be jeopardized both by greater abuse and continued underutilization. The ultimate concerns of TVA's activities are as they have always been, the economic and social welfare of Valley residents and the contribution of the region to the Nation as a whole. That TVA's and Congress' continued concern for the state of the Valley region is warranted is manifest in these examples:

o Of the total number of households in the Valley, 37 percent have incomes of less than $10,000; this is 30 percent more than in the Nation. Moreover, about 22 percent of the population in the Valley live below the poverty level as compared to about 15 percent in the Nation. This divergence would continue.

- In 1983 per capita income for the nonmetropolitan population (almost one-half of the population) of the Tennessee Valley was about 68 percent of the U.S. average. Per capita income in 127 of the region's 201 counties was below 70 percent of the national average. Twelve of the region's counties have per capita income less than one-half the national average. This disparity would worsen.

- In the third quarter of 1985 unemployment rates in the Valley averaged 8.5 percent, while in the Nation they averaged 7.1 percent. Moreover, almost one-half of the counties had unemployment rates in the double digits (above 10 percent). One of every five counties had unemployment rates more than double the national average. There is wide diversity in unemployment rates even among the metropolitan areas of the Valley. The Florence, Alabama MSA averaged 11.7 percent, while the Nashville MSA averaged 4.8 percent.

- The region continues to wrestle with a major structural transition in its economic base. The economic direction and opportunities stemming from the continued loss of heavy metals industry and textiles is uncertain with much of the region ill-prepared to compete in emerging growth industries.

- In 1980 there was a significant difference between the Valley and the Nation in the educational attainment of its population. In the Valley only about one of every two persons had completed 12 or more years of school, while in the Nation about two of every three persons had.

At the same time the Valley natural resource base is confronted with new and old foes. Soil erosion has returned as a major problem. Toxic air pollution is increasingly suspected if not proven to be a contributor to health and environmental problems. Groundwater depletion and contamination pose growing threats to the 60 percent of the Valley residents dependent upon it for drinking water. Increasingly complex needs for hazardous waste management accompany hopes for expanding the Valley's chemical industry. These and other problems and the public and private cooperators which benefit from TVA's work would be cut off at a time when that assistance is critical. Contrary to the Administration's position, there are no other existing entities or programs ready to assume TVA's responsibilities.

Fiscal Year 1987 Budget Request

12. Mr. Bevill: What would be the impact on the Tennessee Valley Authority? How many TVA employees would be lost? How many other jobs will be affected?

Mr. Dean: If the proposed reductions are sustained the Tennessee Valley and the Nation will lose a valuable national asset that has contributed innovative approaches, ideas, and technology to the solution of Valley problems that are of national significance. About one-third of TVA's budget supports the National Fertilizer Development Center, the benefits of which flow directly into lower food costs for consumers across the Nation. About one-fourth of the budget supports management of the Tennessee River system similar to activities that the Corps of Engineers carries out with taxpayer funds in other sections of the country. About six percent of the budget supports operation of Land Between the Lakes, a natural resource laboratory serving students, researchers, and visitors from all 50 States. About one-third of the budget supports natural resource and economic development activities which address issues and solutions that not only improve the Valley region, but can be used effectively in other areas of the Nation. Most of these programs would be eliminated. Those that remained would be far less effective.

Both direct and indirect reductions associated with programs proposed for elimination or severe cutback are described in the material which follows.

ESTIMATED JOB IMPACT OF PROPOSED TVA BUDGET CUTS

The employment impact of the funding reductions proposed for TVA in the Administration's recently submitted budget has several components:

1. The direct loss of jobs by TVA employees. These are the reductions associated with loss of funds in the natural resources, economic development, fertilizer, and agricultural development programs. These employees are enumerated in table 1.

2. The indirect loss of jobs in the regional economy in which TVA employees lose their jobs. The number of indirect jobs in the general economy associated with direct TVA jobs is difficult to estimate without a detailed study. Previous studies, however, suggest that in the TVA region approximately 1.6 jobs are created through "multiplier" effects for each direct job . Using this as a working assumption, the number of "Indirect Jobs" lost is summarized in table 2.

3. Jobs not created because of the elimination of TVA programs. This category can be further devided into:

   a. Jobs to which TVA involvement is a major determinant.

   b. Jobs created by TVA in partnership with other organizations.

   c. Jobs created by activities in which TVA played a largely supporting role.

   The employment associated with these categories of activity are displayed in table 3. Two example programs illustrating the differences between the "major" and "partner" classifications are attached as an appendix.

4. Indirect jobs associated with program-related employment. These jobs, displayed in table 4, have been estimated using the same formula as in table 2.

Table 1

Estimated TVA Employment Reduction
By Congressional District

Congressional District		Number 1987	Principal Location 1986-1992
Kentucky	1	106	Land Between The Lakes (LBL)
Tennessee	2	177	Knoxville, Athens
	3	171	Anderson County, Cleveland, and Chattanooga
	4	6	Morristown
	5	18	Nashville
	8	19	LBL, Paris
Mississippi	1	*	
	2	*	
	3	*	
Alabama	4	186	*Muscle Shoals, but includes Missippippi and Tennessee residents
	5		
North Carolina	11	2	Asheville
Unallocated		24	
Totals		709	

Table 2

Estimated "Indirect Jobs" Associated with Reduction in TVA Employment

Congressional District		Number 1987	Principal Location 1986-1992
Kentucky	1	170	Land Between The Lakes (LBL)
Tennessee	2	283	Knoxville, Athens
	3	274	Anderson County, Clebeland, and Chattanooga
	4	10	Morristown
	5	29	Nashville
	8	30	LBL, Paris
Mississippi	1	*	
	2	*	
	3	*	
Alabama	4	298	*Muscle Shoals, but includes some Mississippi and and Tennessee residents.
	5		
North Carolina	11	3	Asheville
Unallocated		+ 38	
Totals		1,135	

Table 3

Jobs Created by TVA-Supported Programs

Congressional District	1987				1987-1992			
	Major	Partner	Some	Total	Major	Partner	Some	Total
Tennessee	222	7,869	185	8,276	1,304	47,202	950	49,456
Mississippi	183	2,755	50	2,988	816	16,753	400	17,969
Alabama	10	1,537		1,547	120	9,252	100	9,472
Georgia	11	607		618	86	3,782	40	3,908
North Carolina	37	774	20	831	192	4,652	60	4,904
Virginia	5	215		220	30	1,355		1,385
Kentucky	32	1,563	___	1,595	192	9,426	___	9,618
Total	500	15,320	255	16,075	2,740	92,422	1,550	96,712

Table 4

Estimated Indirect Jobs Created by TVA-Supported Programs

Congressional District	Number
Tennessee	13,242
Mississippi	4,781
Alabama	2,475
Georgia	989
North Carolina	1,330
Virginia	352
Kentucky	2,552
Total	25,721

Appendix I

PARTNERSHIP EXAMPLE
SPECIAL OPPORTUNITIES CITIES AND COUNTIES
1985 CONGRESSIONAL DISTRICT 1, TALLAHATCHIE COUNTY, MISSISSIPPI

Industrial Retention - Charleston Industries

Project Funding:

SOCC	$100,000
Local (Industrial Revenue Bonds)	225,000
State (CDBG)	75,000
Private	400,000
Total Project Cost	$800,000

Jobs Retained - 50

Appendix II

MAJOR CONTRIBUTOR EXAMPLE
EXISTING INDUSTRIES PROGRAM
1985, CONGRESSIONAL DISTRICT 2, FRANKLIN COUNTY, MISSISSIPPI

TVA Contribution $9,000

Employees Trained and Hired - 20

Requirements and process of EIP training program:

1. The potential new employee is first certified as being out of work and is processed through normal State Employment Security procedures.
2. The employer (EIP client) then completes a simple workplan and budget for new employee participant.
3. The employer agrees to offer on the job training for the new employee for a period of not less than eight weeks and then retain the new employee for an additional four weeks (three months total).
4. If at the end of the required training period the employer is satisfied with the new employees performance, the manufacturing firm submits an invoice for reimbursement at a rate of $450 per new employee hired under the training program.

Fiscal Year 1987 Budget Request

13. Mr. Bevill: What would be the effect of these reductions five or ten years down the road? What is the long-term impact on the region?

Mr. Dean: The Valley has not been generating jobs rapidly enough to keep up with the growth in its labor force——especially in the nonmetropolitan part of the region. In the longer term, if this continues, people will simply have to leave the area and look for jobs elsewhere. The economic momentum the region developed in the late 1960s and 1970s would be lost.

One factor in this situation is that we have more of the older, mature manufacturing industries than the rest of the Nation. Another is that the national economy is in the midst of a major economic transition, with growth occurring in the knowledge-intensive service and manufacturing industries, defense industries, and other business and personal service industries. The Valley has a considerably smaller than its proportional share of these industries. As a consequence, we are not keeping up with the rest of the country in the part of the economy in which long- term growth is taking place.

Between 1979 and 1985 employment in the nonmanufacturing, nonagricultural part of the national economy grew by 8.5 percent. In the Tennessee Valley its growth was only about 2 percent.

If the Valley does not participate fully in the national economic transition, we could find ourselves in a self-reinforcing downward spiral where people leave the region to find jobs and the resulting loss of tax revenues makes it even more difficult to train workers and offer other advantages that will attract jobs. Remember that in the 1930-1960 period a net outmigration from the Valley of almost two million people took place.

From another perspective, the near-term impact of these reductions will be further deterioration of surface and groundwater quality and the loss of aquatic resources through mismanagement. The timing of these reductions would be particularly unfortunate since past efforts have identified solutions to water resource problems of regional and national concern which are now ready to be implemented at reasonable cost. Problems and needs such as reservoir water quality management, improvement of reservoir releases, nonpoint source pollution control, and groundwater protection will go unanswered. These activities are interrelated with TVA responsibilities for operation of the reservoir system. A loss of funding will adversely affect TVA's ability to operate and manage the reservoir system for maximum beneficial use. Degraded surface and groundwater quality over the long term will result in long lasting and severe economic and environmental crisis in the region.

Furthermore, there will be no systematic data available on the health of the aquatic resource on which to base plans for improvement. Problems with toxic contamination of fish and other aquatic life would continue to limit use of this resource and would jeopardize the affected resources and the human population consuming them. Even worse, early warnings about consumption of fish from areas of contamination will not be possible.

Unwise development of flood-prone lands will increase due to the lack of useful flood hazard information. Losses—in both lives and dollars—from floods will increase. The economy of the region will suffer as a result of lost production, lost jobs, and blighting of flood-prone commercial, industrial, and residential development. The demand for federally subsidized flood protection measures will increase. Federal outlays for fighting floods, postflood recovery, and flood insurance will also increase.

In the region surrounding Land Between The Lakes (LBL), a 170,000-acre national recreation area which is the second largest contiguous Federal ownership east of the Mississippi River, the effects would be catastrophic. LBL is the centerpiece for a $200 million tourism industry in western Kentucky and Tennessee. This industry would be severely crippled and thousands of jobs in the region would be lost. Without resources to operate, maintain, and protect the facilities and natural resources at LBL, this $80 million Federal investment would quickly deteriorate and be destroyed.

Fiscal Year 1987 Budget Request

14. Mr. Bevill: What has been the reaction of the people of the Tennessee Valley region to these recommendations?

Mr. Dean: The response has been essentially the same as last year. The people which TVA serves recognize that the agency is undergoing a severe test with regard to its nuclear program and that all elements of the Federal Government must make every effort to help reduce the Federal deficit. The public also recognizes the fundamental soundness of TVA's programs and supports its continued participation in the development of the region. There is also recognition by public and private sector leaders that TVA's appropriated budget has already been reduced significantly since 1980—a cut of some 49 percent in 1980 dollars. In some cases, such as Land Between The Lakes, user fees have been initiated and/or increased. the public generally accepts the need for these fees, given the need to control the Federal deficit.

Fiscal Year 1987 Budget Request

15. Mr. Bevill: Have you seen a national response to the proposed budget cuts?

Mr. Dean: Yes. While some of the other proposed reductions have overshadowed the response in terms of national press coverage, the major national cooperators with whom we work have pledged their support to the restoration of TVA's budget to realistic levels, and they have spoken out publicly in this regard. These include, among others, the American Public Power Association, the National Rural Electric Cooperative Association, the Tennessee Valley Public Power Association, the National Association of Conservation Districts, the National Farmers Union, The Fertilizer Institute, the National Fertilizer Solutions Association, the International Association of Fish and Wildlife Agencies, Land Between The Lakes Association, the National Wildlife Federation, and the National Resources Defense Council.

Fiscal Year 1987 Budget Request

16. Mr. Bevill: What actions did the Board take when it heard of the budget proposals?

17. Mr. Bevill: What was the Administration's response to efforts of the Board to have the budget increased?

Mr. Dean: The Board appealed by letter to James Miller, Director of OMB, rquesting reinstatement of funding to TVA's request level of $114 million.

TVA was told that the letter would be reviewed by OMB, but there was very little chance of increasing the passback level of appropriation funding. In fact, a face-to-face meeting with OMB personnel was not encouraged. TVA's appeal was denied.

Economic Development Activities

18. Mr Bevill: Most of the reductions in TVA's budget have occurred in the so-called "economic development" activities. Please describe TVA's economic development programs, the rationale for them, and the impact of them in the region?

Mr. Dean: TVA's economic development programs are one part of TVA's broader mission of integrated resources development and conservation. In pursuing this broad mission, TVA acts as a partner with other regional and Federal actors. This helps minimize the cost to TVA while maximizing the impact on the region. At the same time, TVA seeks innovative solutions to problems so that the benefits are not confined to he Valley region, but rather have national application.

The Tennessee Valley lags behind many other sections of the Nation in terms of economic well-being. By any number of measures—per capita income, percentage of families in poverty, unemployment rates, and the like—it is plain that the Tennessee Valley is not catching up or even keeping pace. It has been this way for a long time.

TVA's economic development programs are designed to improve the standard of living in the Tennessee Valley. But they build local self-reliance, not dependence on handouts. Specifically, these activities are designed to meet the most pressing economic needs of the region. These needs include helping create more jobs, establish and maintain strong and economically viable rural communities, preserve and strengthen the region's natural resource base, and create a better educated and more highly skilled workforce.

These needs are inextricably interrelated. For example, without strong communities and local leadership, all the direct financial assistance in the world won't really help. Communities need strong, solid infrastructures to attract and hold new jobs.

A strong resource base can contribute greatly to a strong economy. For example, 60 percent of the Tennessee-Tombigbee area is covered by forests. This resource alone provides about 32,000 jobs in that area.

Without educational parity, the gap between the haves and the have nots will continue to widen. More and more frequently, jobs call for education in robotics, laser technology, and other advanced skills. TVA programs, therefore, are aimed at realizing the full potential that each of these various elements can contribute toward a healthy economy.

The impacts of TVA economic development activities are significant and exceed the dollars invested. Although the total resources for economic development are not great—about $15 million in fiscal year 1986—TVA does an effective job of finding local, State, Federal, and private partners to match funds provided by TVA. This "leveraging" of funds from both public and private parties has a significant impact on the region. For example, TVA had $5.6 million—for technical assistance, not grants—in fiscal year 1985 to help stimulate job creation in the region's poorest and least developed areas. Working in partnership with State and local cooperators and with private industry, a total investment of $21.8 million was generated—nearly four times the TVA investment. The result was the creation of 2,500 jobs. These jobs take people off selfare and do not crate a long-term dependence on Federal programs.

As seen by this example, TVA's approach to addressing economic development needs includes working in partnership with communities and other economic development agencies in the region; and demonstrating cost-effective solutions to local problems and needs, then transferring solutions to other parts of the region and the Nation. In conducting these economic development efforts, TVA serves as a catalyst. Emphasis is deliberately placed on "filling gaps" and providing the necessary ingredient to make things happen rather than on duplicating services and skills provided by others.

TVA's economic development programs have had positive impacts on the Tennessee Valley. Gains have been made. Life has been improved. To stop the programs now would negate many of the hard-earned gains achieved over the last 53 years.

Economic Development Activities

19. Mr. Bevill: What other Federal, State or local government programs are available that could be used instead of TVA's programs?

Mr. Dean: The loss of TVA's economic development efforts would create a noticeable void because of our unique role as a partner and catalyst for economic development in the Tennessee Valley. Because TVA programs are designed consciously not to duplicate efforts by others, if TVA's programs were stopped, many things simply would not get done.

TVA is headquartered in the region it serves. Employees are located throughout the Valley and are in position to work with local leaders on a consistent one-on-one basis to identify problems and develop creative solutions. Many Federal agencies are granting agencies, but that is not the case with TVA. Frequently TVA's unique contribution is the know-how to do something after funds have been obtained from other partners.

Furthermore, TVA has been collecting data in the region for more than 50 years. This data is an invaluable source of information concerning the region's resources, people, problems, and opportunities. Much of this information simply is not available elsewhere.

While the Valley States, other Federal agencies, and local governments, are being asked to assume an increasingly large responsibility for economic development activities, they continue to lack the necessary resources and expertise to adequately address these critically important functions.

An example of TVA's role is our partnership with the Small Business Administration (SBA). This effort combines our expertise in such areas as training, analysis, energy, and engineering with SBA's experience in business promotion and financial planning. The result is a very effective effort to help create industrial and commercial business opportunities in the region.

TVA's role in identifying emerging economic development issues and problems and designing effective solutions to these matters further underscores the loss that would occur if TVA economic development programs were eliminated.

Economic Development Activities

20. Mr. Bevill: What evidence can you provide to show that these economic development programs have created jobs, enhanced the tax base, or helped to alleviate problems in the region?

Mr. Dean: In fiscal year 1985 TVA helped create 16,000 new jobs in the region and helped train 16,800 workers, providing them with the skills necessary to find new or better employment in the region's changing economy. Some specific examples of results of these economic developments in 1985 follow.

Our existing industries program provided technical services in areas such as energy management, transportation cost analysis, and air and water quality assistance to 244 expanding manufacturers. This program helped create 9,300 new jobs and provided the base for additional trades and service-related jobs, as well as enhanced the tax base for both local and Federal governments.

The special opportunities counties and cities (SOCC) program designed and implemented projects to assist in the creation of jobs in the Valley's least developed areas. About 2,500 jobs were established in areas where jobs are very difficult to create. As an example, prior to assistance from TVA, Stewart County, Tennessee, had an unemployment rate of 40 percent. This has been reduced to 20 percent.

A prerequisite of the SOCC program is to have multiple partners, especially from the private sector, supporting each project. This leveraging requirement has resulted in the development of more projects and a job-to-dollar ratio of about one job for every $3,000 of SOCC money invested.

The skills development program helped train 16,800 people. As impressive as these numbers are, it is perhaps even more significant that much of this training was conducted in areas of emerging technology such as robotics, microcomputers, and lasers—increasingly important growth industries. Over the past three years, for every $1 invested by TVA in these training programs, the Federal Government received $7 in income taxes, as well as a direct reduction in Federal expenditures for unemployment benefits, welfare, and other social expenditures. This compares to a $3 return in 1980.

Economic Development Activities

21. Mr. Bevill: Provide a list and description of all economic development projects and activities in fiscal year 1984, fiscal year 1985, and planned in fiscal year 1986.

Mr. Dean: Economic Projects and Demonstrations is a new category established in 1986. It includes five major components—commercial business assistance, economic technical assistance, local government assistance, advanced technology development, and existing industries. TVA's assistance and demonstration project in Oklahoma is also performed within this area. General descriptions of these components are as follows:

1. Commercial business assistance—Activities concentrate on the nonmanufacturing sector of the economy. This work is done in partnership with local governments, community leaders, and private enterprise. Projects provide job creation assistance and offer a range of technical information and services covering such areas as finance, engineering, transportation, and energy and waste management. This activity was initiated in 1986.

   Although this program only started recently, 10 communities in 6 States are or soon will be participating in this effort to improve local economies. Projects are now active in 5 of these towns and 5 others have been selected for future participation. Examples of efforts include:

- Starkville, Mississippi—A market analysis identifying new business opportunities in this community will be completed this year. Staff will work with the local university to conduct a business education workshop which will provide new entrepreneurs with business management skills. The objective of these activities and other business development services, such as a franchising workshop, will be to develop and recruit new businesses. As a result of this program, it is anticipated that up to 40 service sector jobs will be developed.

- Black Mountain, North Carolina—A market opportunities analysis has been completed for Black Mountain. As a result of this analysis, entrepreneurs are aware of the voids in the Black Mountain service sector. TVA will assist local leaders in the development and recruitment of businesses to fill the identified voids. In addition, business education training will be established through a local university. The university, working with TVA, will train prospective entrepreneurs in accounting, business plan development, marketing, and advertising. Anticipated results are up to 30 service sector jobs.

- Benton, Kentucky—A market opportunities analysis has been completed and staff is working with local officials to develop new local service sector businesses. Plans are being made to provide business training through a local university. The business training will provide entrepreneurs with basic business skills in accounting, managing, and marketing needed for success in a new business. In addition, staff will work with prospective entrepreneurs in a franchising workshop that will highlight the problems and opportunities associated with franchise businesses. The anticipated results are up to 25 service sector jobs.

- Jamestown, Tennessee—An analysis of market opportunities in Jamestown has been completed and staff are focusing on business development. A financial planning workshop will be targeted at entrepreneurs who plan to develop businesses that were identified by the market opportunities analysis. In addition, staff will conduct business education training with a local college so that new entrepreneurs will have the necessary basic skills in business development. Anticipated results are up to 20 service sector jobs.

2. Economic technical assistance - Three of the more salient themes running through TVA economic development programs in fiscal years 1984 and 1985 are pulled together in 1986. These themes are: (1) efforts to strengthen the economic development roles of TVA's 160 power distributors in their communities, (2) TVA assistance to communities in the development of long-term economic development strategies,

and (3) economic development demonstrations and assistance tailored to meet the special needs of communities and public and private sector community-based organizations. The results of these demonstrations will be documented and made available to others through various national organizations such as the National Association of Towns and Townships.

The cumulative positive effects of these cooperative efforts in recent years are reflected in all Valley States and in dozens of towns, counties, and rural areas across the region. A few examples follow.

The 160 TVA power distributors have the potential to be a strong force for economic development in the region. This new program focuses on training power distributor staffs to lead county and municipal development projects. Modeled on a successful 1985 pilot with a rural cooperative in Mississippi, the program will enable distributors to take the lead in organizing local development groups, in setting priorities, and in finding partners to carry out projects.

Developing economic development strategies was an effective and well received form of TVA technical assistance in fiscal year 1985, offering great promise in the future. These projects involved a broad spectrum of community involvement in identifying local needs, development opportunities, and investment priorities. Ten countywide strategies were completed or under way at the end of fiscal year 1985, including five in Mississippi where the program has been in great demand. The program achieved a $21 million return in local public-private sector investment at a cost to TVA of about $800,000. The program has been effective in getting significant private sector financial participation in strategy implementation even in some of the Valley's poorest counties and has achieved great success in overcoming years of noncooperation between communities in many areas of the Valley.

Although TVA economic development demonstrations take a wide variety of forms, emphasis in all is on improving local economies. Differing approaches to accomplish this aim have been taken in various locations around the region in recent years. Several examples of the types of economic technical assistance initiatives that TVA has cooperated in with others in recent years follow. Similar programs are being conducted in 1986.

- Hickman (Fulton County), Kentucky—In 1984 TVA assisted in organizing, planning, and identifying financial resources from State and Federal agencies to be used in purchasing and restoring a rail line between Dyersburg, Tennessee, and Hickman, Kentucky. Over $1.7 million in State and private sector funds was invested in the project. In 1985 TVA provided technical assistance to a local task force which resulted in the establishment of a rural enterprise zone—an area especially designed and equipped to attract new industries. At the end of 1985, Hickman County recruited a new industry expected to employ 200 people. Today, Hickman County, Kentucky, is the Valley's most effectively organized State rural enterprise zone. Some 200 jobs were created in the zone in the first quarter of 1986. TVA assistance to the county is expected to be broadened more this year.

- Kemper County, Mississippi—In 1984 TVA assisted the newly created Kemper County Economic Development Authority in completing an economic development strategy for the county. The strategy represented the first time local public and private sectors had undertaken joint planning for economic development. As a result of the effort, several needs were identified. Subsequently, the community raised $28,000 in local public and private funds to hire a full-time economic developer to implement the strategy. In 1985 TVA provided technical assistance and a used van to implement a volunteer transportation system demonstration in the Kemper Springs community. This volunteer-oriented, self-help project demonstrated quite effectively that communities without a publicly funded transportation system could operate their own systems through the use of volunteers.

- Nonprofit Organization Energy Conservation Demonstration—In 1984, 95 small, nonprofit organizations in Haywood, Madison, and Buncombe Counties, North Carolina, were provided assistance in carrying out weatherization measures aimed at reducing energy-related operating costs and allowing the organizations to devote more of their limited funds to meet local service needs. About 650 volunteers from the nonprofit organizations combined with some $30,000 in private sector funds to accomplish the weatherization program—which was later expanded to also include Watauga and Henderson Counties. The nonprofit organizations installed various energy conservation materials including weatherstripping, caulking, insulation, and storm windows.

- Blue Ridge, Georgia, and Murphy, North Carolina—In 1984 TVA assisted Levi Strauss community involvement teams identify community needs and projects to which the company could provide assistance. TVA's contribution to these development efforts came through the provision of technical assistance and information, while funds were provided by the private sector.

- Campbell-Claiborne Counties, Tennessee—In 1984 TVA provided technical assistance to the Clear Fork Valley community in a wide range of self-help projects including production of a model low-cost house and demonstrating land banking practices through the Woodland Community Land Trust. In 1985 TVA continued providing technical assistance to the isolated rural community. TVA retiree volunteers were used to assist in development projects, including a retiree-assisted agriculture project. This is only one of dozens of examples of the contributions made by TVA retiree volunteers in recent years in supporting and furthering TVA's long-term economic development mission. Retiree volunteers have been a valuable resource to TVA. During 1985 alone, 112 retirees and their spouses contributed 12,825 volunteer hours to projects involving community and economic development, recreation, agriculture, computer training, solid waste technical assistance, energy conservation, identification and collection of TVA artifacts, and hosting of visitors to TVA facilities and projects. Through giving their time, TVA retiree volunteers have demonstrated and developed into a continuing low-cost alternative to more expensive types of technical assistance.

3. Local Government Assistance—In 1985 TVA provided technical assistance to the Mississippi State Auditor's Office in investigating computerization of the State's new local government accounting manual. This and other county government computer applications could have potential benefits to the State of over $13 million, according to the State auditor.

In 1986 TVA will provide the State assistance in developing standardized computer software to help county governments address local financial management functions, thus increasing their operating efficiency. TVA and the State Auditor's Office will jointly develop an educational package to assist in training users and implementation of the software. One rural Mississippi county will be selected as a demonstration site for testing the software. The software will remain in the public domain. This activity was initiated in fiscal year 1986.

4. Advanced technology development—Activities concentrate on those businesses or industries that have potential for high-technology development. Under this new program, nonprofit organizations and companies may be provided technical assistance, development contracts, or limited seed capital loans to help the region take advantage of its technology-related resources and the potential to establish new businesses, generate private sector investment, and create new jobs. In addition, opportunities for interagency research and development leading to commercialization of technology are pursued between TVA and other agencies such as the Electric Power Research Institute, Oak Ridge National Laboratories, the National Aeronautics and Space Administration, and Valley universities. This activity was initiated in 1986. Examples of these efforts include the following.

- Tennessee Technology Foundation--Cooperative work with the foundation includes exploring possibilities for technology development initiatives in southern-middle Tennessee, and in Chattanooga and Johnson City, Tennessee.

- The southern-middle Tennessee high-technology initiative is designed to develop a strategy for promoting the technology development potential in the Tullahoma/University of Tennessee Space Institute area. TVA staff is working with a committee of local leaders to assess this potential.

- A Chattanooga, Tennessee, initiative will be patterned after Knoxville's technology foundation in that a group of local businessmen is assessing the area's potential for technology commercialization and development and will lead a program to capitalize on these opportunities. TVA, the State, and other agencies are providing assistance to the local committee members as they make their assessment and carry out their program.

- In Johnson City, Tennessee, TVA has contracted with the local economic development board to conduct a feasibility study for a telecommunications network based at East Tennessee State University. The board will be instrumental in conducting the feasibility study with a view to establishing capabilities for educational and business support purposes.

- Shoals, Inc., Muscle Shoals, Alabama—This technology commercialization program includes continuing education and a new business incubator. The Shoals, Inc., Technology Transfer and Continuing Education Center is operating successfully, providing a variety of training courses for TVA and other companies in the Muscle Shoals area. The principal project for 1986 is the development of a small business incubator to be operated by Shoals, Inc. A significant recent development at Shoals, Inc., is the creation of International Engineering Consultants, Inc. (IECI), a for-profit engineering consulting firm formed by retirees from companies in the Muscle Shoals area. IECI is housed at Shoals, Inc., and has contracted with Shoals, Inc., for administrative and marketing services. As such, it constitutes the first major tenant of the Shoals, Inc., small business incubator.

- Technology Commercialization—A combination of limited funding and technical assistance is being provided to three companies involved in technology commercialization: ANFLOW, Inc., PHYTON Technologies, Inc., and Ross-Kincaid Engineering, Inc.

- TVA is helping fund further development of the ANFLOW innovative municipal wastewater treatment process. A contract has been signed with ANFLOW, Inc., for engineering development, creation of operating procedures for anaerobic waste treatment reactors, and demonstration of the ANFLOW technology. The project should bring into operation this new technology in the Haleyville, Alabama, Municipal Utility System.

TVA is also working with PHYTON Technologies, Inc., a Knoxville-based biotechnology development company that is advancing the commercial application of tissue culture practices, i.e., plant cloning to produce superior hardwoods for land reclamation and general forest management purposes. TVA is assisting PHYTON with species lection, outplanting, and the identification of funding sources.

A seed capital loan request from Ross-Kincaid Engineering, Inc. (RKE), of Lewisburg, Tennessee, is being reviewed. With this loan, RKE would expand its operations by leveraging funds on a 3-to-1 basis with a commercial lending institution. The firm creates custom computerized machinery networks and uninterruptible power supply devices. Its range of products will support the complete automation of manufacturing plants and thus potentially adds to the advanced technology and manufacturing base of the Valley.

5. The existing industries program (EIP) is a package of industrial customer services which has been designed to help plant managers lower their operating costs and plan

for expanded production. More than half of the region's new jobs are the result of industrial expansions. The program targets small and medium size manufacturing firms that are either expanding or have expansion potential. Candidate firms are identified by TVA power distributors in the power service area and economic development districts in the nonpower area. Employee training assistance is made available to expanding firms which agree to hire and train the unemployed. These services were provided in fiscal years 1984, 1985, and 1986.

The customer service package is available throughout the 201-county TVA service area and includes the following services:

- Comprensive energy audits
- Electrical development design assistance
- Renewable energy services
- Financial resource identification
- Transportation rate analysis
- Employee training
- Market research
- Preliminary engineering
- Forest product development
- Air pollution control
- Wastewater treatment
- Water supply planning

o Solid waste management

o Hazardous waste management

TVA's services represent initial assessments and preliminary recommendations that rely on the services of private sector firms for full implementation. TVA's services do not compete with private sector providers, but typically generate new business for them.

This program has been most successful. If duplicated throughout the Nation, the results of exploiting opportunities for growth in existing industry could be dramatic in their local impact by reducing unemployment, increasing various tax bases, and in reducing government transfer payments to those out of work. To review program impacts in recent years:

- Fiscal Year 1984—Provided 201 services to 84 expanding firms, creating 4,281 new jobs.

- Fiscal Year 1985—Provided 616 services to 245 expanding firms, creating 9,294 new jobs.

- Fiscal Year 1986 (to date)—Provided 250 services to 111 expanding firms, creating 3,353 new jobs. The goal for 1986 is to provide technical services and limited training subsidies to 250 existing manufacturing firms to assist in planning for plant expansions resulting in the creation of more than 6,000 jobs.

Examples of some 1985 program activities follow.

- In Guntersville, Alabama, an EIP-aided expansion by the Comptronix Corporation helped create 280 new jobs. EIP services to the firm included a comprehensive energy audit, electrical development engineering, employee training assistance and preliminary civil engineering.

- Hilton Athletic of Pelham, Tennessee, created 35 new jobs with the completion of their EIP aided expansion. EIP services included a comprehensive energy audit, transportation rate analysis, financial resource identificiation and preliminary civil engineering.

- EIP assisted the Ackerman Company of Ackerman, Mississippi, with their major expansion plans and the company added 400 new jobs. EIP services included a comprehensive energy audit, transportation rate analysis, preliminary civil engineering and employee training assistance.

- Stellar Research, Ltd. of Asheville, North Carolina, added five new jobs with their expansion. The EIP program provided preliminary civil engineering, market research, air pollution control assistance and solid waste management assistance.

The EIP customer service package allows TVA to accomplish three major corporate objectives, the efficient use of electricity, the creation of more job opportunities and the preservation of environmental quality.

6. Oklahoma project. TVA's work on this project began in 1983 and will be completed in fiscal year 1986. Efforts focus on economic development activities such as identifying industrial sites, developing conceptual site plans, target industry analysis, and leadership training for public officials. TVA also promotes implementation of previously identified job creation projects. This project is serving as a model for the transfer of TVA resource and economic development technology to other predominantly rural areas of the country. It is demonstrating how the integrated, multidisciplinary approach TVA utilizes can be incorporated into other regions' problemsolving. Specific examples of the work performed include the preparation of a report on the short-term solutions to water treatment and distribution problems in the 24-county project area; establishing an association to assist Atoka County, Oklahoma, vegetable growers in marketing their products; and initiating the Choctaw Economic Development project, encouraging economic development in a predominantly rural three-county area experiencing severe unemployment and outmigration.

Special Opportunities Counties and Cities (SOCC) focuses special emphasis on the poorer, less developed areas in the region. The program concentrates on efforts that will improve the economy of these areas, emphasizing projects which create jobs, enhance per capita income, and develop a community's capacity to deal more effectively with its problems. This program uses limited loans of leverage capital, a variety of TVA technical assistance, and strong local citizen involvement to accomplish its mission. This program was conducted in fiscal years 1984, 1985, and 1986. It was expanded in 1985 to address the severe economic conditions in 50 of the Valley's least developed areas. Work with 50 counties continued in 1986.

This program has been very successful in creating new jobs in areas where unemployment is higher than the regional and national norms. As noted in the table below, more than 5,000 jobs have been created since fiscal year 1984. The number of jobs created in 1986 is expected to equal or surpass the record number of jobs created in fiscal year 1985.

Fiscal Year	Jobs Created
1984	1,320
1985	2,707
1986 (to date)	1,115
Total	5,142

As reflected in the following examples, the strategies taken to achieve local job creation vary from area to area, depending on local needs, resources, and capabilities, but collectively, they are having a noticeably positive impact on the region's economy.

Year	Location	No. Jobs Created	Project Description
1984	Scott Co., TN	225	Assisted with purchase of industrial building for lease to manufacturing company.
1984	Benton Co., MS	300	Assisted county in land and rail spur purchase for local furniture manufacturer.
1985	Lauderdale Co., TN	300	Expansion to tomato grower's cooperative—by 1986 Tennessee emerged as fourth largest tomato-producing State.
1985	Scott Co., TN	150	Assisted county with purchase of industrial building for two new industries to locate.
1985	Johnson Co., TN	350	Assisted county with purchase of industrial building for new footwear plant manufacturer.
1985	Madison Co., NC	170	New surgical pack sealing company expansion to eastern U.S. market area.
1985	DeKalb-Kemper Cos., MS	250	Assisted in expansion of local industry.
1985	Kemper Co., MS	225	Assisted in location of industrial garment manufacturer.
1985	Fannin Co., GA	25	Assisted in the establishment of a new record and tape production facility.

Year	Location	No. Jobs Created	Project Description
1985	DeKalb Co., AL	180	Assisted in the provision of water and fire protection service to retain and expand shoe manufacturer.
1986	Kemper Co., MS	250	Assisted in construction of manufacturing facility for automobile industry.
1986	Johnson Co., TN	150	Assisted with construction of addition to manufacturing firm.
1986	DeKalb Co., AL	100	Assisted with water system development to provide services to an expanding industry.

Minority Economic Development provides assistance to minority-oriented business development organizations and other entities that can demonstrate an ability to create jobs for minorities. Technical assistance is also provided to clients of the TVA-sponsored minority enterprise small business investment corporations and other minority businesses interested in expanding into high-technology areas. This program was conducted in 1984, 1985, and 1986. A statistical data base was initiated in 1985 to monitor the success of minority firms in the region. In 1986 special assistance was focused on a 29-county area in southwest Tennessee and north Mississippi which comprises about 50 percent of the Valley's minority population, in an effort to stimulate economic growth in that sector of the region.

Following are examples of economic development projects that were supported in 1984, 1985, and 1986.

- Tennessee Valley Center - The Memphis-based Center executed grants and contracts totalling $1,828,433 through initiatives in housing development and training. Of the total, $687,433 was generated to administer an on-the-job training program for Shelby and Fayette Counties (Tennessee) that resulted in the creation of 6 permanent jobs in 1984 and 225 new jobs in 1985. Another $1,141,000 was secured in grant agreements that enabled the organization to pursue the development of two congregate housing projects for the elderly that yielded 15 permanent jobs and 114 temporary jobs in 1985. In a separate effort, the Center raised $256,000 to support an expanded internship program that provided work experiences for 146 economically disadvantaged students during the summer of 1984. TVA is contracting with the Center in 1986 to help the agency implement initiatives connected with the 29-county project.

- 29-County Project - TVA has undertaken a major effort to develop mechanisms that will bring the Valley's minority and other disadvantaged residents up to par with the Valley's majority sector. As a first step, a comprehensive survey was conducted in a 29-county area of southwest Tennessee and north Mississippi. The study was developed a statistical process control training program to be utilized State-wide with mutually identified new and/or expanding industries. Training programs are being conducted through 10 State vocational/technical schools, community colleges, four-year educational institutions, and private companies with technical assistance provided by TVA. Some $38,000 has been provided by TVA with over 3,000 being trained, and the curriculum has been transferred to seven postsecondary institutions.

TVA has assisted Chattanooga State Technical Community College (CSTCC) establish a robotics and systematic automated manufacturing center. This project resulted in over $2.2 million of capital investment from the public and private sector to make the center operational. TVA assisted in facility and curricula planning, and faculty skill upgrade training. CSTCC, in partnership with TVA and General Electric (GE), has established a regional training center and curriculum for computer-aided design utilizing GE equipment. CSTCC is rapidly becoming the robotics and computer-aided design service training center for industry in the southeastern United States. Over 10,000 individuals have received training since the project began.

The Gadsden Cooperative Center for Advanced Manufacturing Technology is a joint initiative begun in 1986. Located on the campus of Alabama Technical College, it is designed for training, research, and education in industrial manufacturing and high technology. The project is a joint effort between the City of Gadsden, Alabama, Gadsden State Community College, the University of Alabama, and TVA. The center will focus attention in the areas of industrial and plant maintenance technologies, mechanical and civil engineering technologies, electronics, machine technology, management science, and business operations.

TVA is assisting Tri-Cities State Technical Institute, the Tennessee Department of Education, the State Department of Economic and Community Development, the Office of the Governor, and the Johnson City/Washington County Industrial Development Commission develop training to serve industries. TVA provided assistance for the development of digital logic, microprocessor, and computerized numerical control manufacturing curricula and equipment. The program has served numerous industries in the area and will provide training for some 8,000 people by 1987. The wages for these positions range from $6.62 to $10.00 per hour. This effort also preserved 2,000 jobs which might otherwise have been lost.

Since 1984 TVA has been active in a broadly based project in the north Nashville area. It is designed to encourage prosperity in the city's blighted northern section and emphasizes increasing educational opportunities for local postsecondary school students. The project has three primary components: an innovation center, an industrial training center, and a high-technology training center.

- The Tennessee Innovation Center is being developed to support infant enterprises. Businesses spunoff from the Center will lead to further economic development of the area. Through assistance from TVA, the State Board of Regents and Tennessee State University (TSU) are building and operating the facility. The building and other services provided to new business owners are intended to reduce the failure rate of the businesses and thereby raise the number of jobs in the Nashville area.

- The Industrial Training Center promotes development of Cockrill Bend Industrial Park. Uses of the facility include a craft/skill upgrade program, an industry-specific training program, and a TSU aviation program. TVA has built the Center on TSU-owned land in Cockrill Bend. It will be used by TVA, TSU, and Nashville State Technical Institute to provide craft upgrade and industry-specific training programs to serve new and expanding industries in the Nashville area. Other State agencies, including the Department of Economic and Community Development and the Division of Vocational Education, are also involved.

- The High Technology Training Program promotes economic development through a cooperative effort between TVA and Nashville-based higher education institutions. The project is developing a high technology training program to promote educational opportunities at participating educational institutions and for training in support of new industries locating in Nashville.

TVA is assisting the State of North Carolina in curriculum design at Haywood Technical College for several high-technology skills. The first of these high-technology curricula involves robotics. Two local plants are beginning to use robotics applications in production. Total investment in these projects is about $3 million, while the cost to TVA has been some $289,000.

Since 1985 TVA has been working with the Mississippi Office of the Governor, State and local departments of education, and local institutions in the development of high-technology curricula to provide services to State residents and area industries. TVA has assisted in the development of "The Tupelo Model," an integrated high-technology training effort with a specifically established and coordinated curriculum beginning at the high school level and continuing through postgraduate studies. Participating institutions are the Tupelo City Schools, Itawamba Junior College, and Mississippi State University. Skill areas include microprocessor/computer technologies, word/information processing, microelectronics, and robotics.

In 1986 TVA, the Kentucky Department of Vocational Education, Western Kentucky University, and the Blue Grass Skills Corporation are developing a four-year curriculum in automotive (electromechanical) engineering technology. This curriculum will be a first in the Valley region and has been requested by General Motors, TOYOTA, and the ISUZU companies which have production facilities in Kentucky. Students will be supported by scholarships provided by area dealers. TVA technical assistance has focused on adapting the manufacturing technology curricula utilized in training in the Detroit area to the needs and abilities of Valley residents.

Through a cooperative agreement among TVA; the National Education Association (NEA); Dalton, Georgia's Westwood Primary School; and Dalton's Department of Education, a new national demonstration entitled "Mastery in Learning Project" is being demonstrated in the Valley region as one of six pilot sites nationwide NEA has selected to develop the concept. The purpose of the project is to find more effective ways for teachers to teach and students to learn through helping individual school faculties upgrade their curricula and make "mastery"--the command of subject matter--the new standard of student expectation. the

Georgia project is an effort to synthesize elements of the five other demonstration sites.

In 1985 TVA embarked upon a two-year pilot demonstration, "Core Concepts," which will develop the first broadly applied use of laser disc technology in the classroom. The demonstrations will focus on mathematics and science teaching and will provide an information-age teaching tool that preserves instructor control, accommodates different teaching styles, facilitates both group and individual learning, focuses on basic subject concepts, incorporates instructional design principles, ensures effectiveness through field testing, complements existing print materials, simulates laboratory experiments, and produces cost-effective learning.

The schools involved in the mathematics demonstration are located in Avery County and Asheville city, North Carolina, Lauderdale County, Alabama, and Knoxville city, Tennessee. Dade County and Dalton, Georgia, are the sites for the mathematics and science demonstrations. All these locations are recognized by the NEA as representative sites supportive of national models for educational application. This pilot program will be impacting over 5,000 public education students and training over 50 teachers in six school systems in this new teaching technology. Vanderbilt University will conduct the educational research for national distribution. The three areas of research are comprehension, classroom management, and student attitudes.

The Navigation Development program's objective is to maintain and enhance a safe and efficient public waterway in order to maximize its contributions to the economic development of the region. Through this program, TVA provides a full range of technical assistance services to State and local governments, public port authorities, commercial towing lines, and individual industries.

The program identifies physical obstacles that hinder full economical use of the waterway; makes feasibility reports; plans new navigation facilities; maintains and disseminates current information, statistics, and other literature on the waterway; and provides economic and transportation analyses as aids in the understanding of the significance of water transportation in the development of the region. Information on potential transportation savings is provided for shippers using the Tennessee River. These activities were conducted during fiscal years 1984, 1985, and 1986.

Specific examples of program activities include a joint study with the U.S. Army Corps of Engineers on the need to improve navigation locks on the Upper Tennessee River system; environmental and preliminary engineering assistance to Nickajack Port near South Pittsburg, Tennessee; a feasibility study of potential navigation improvements at Guntersville, Alabama; a navigation development conference at Decatur, Alabama to investigate new transportation opportunities created by deregulation of the transportation industry and completion of the Tennessee-Tombigbee; environmental assessment assistance for construction of a port at Columbus, Mississippi; environmental assistance to a grain alcohol plant recently located on the Tennessee River near South Pittsburg, Tennessee; technical assistance to Florence and Lauderdale Counties, Alabama, for public port development; and transportation rate assistance to Nissan in middle Tennessee, Tennessee Eastman in east Tennessee, Coal Plus (a subsidiary of Mitsubishi International) in north Alabama, and Goldkist in north Alabama.

The Tennessee-Tombigbee Waterway project was begun in fiscal year 1985 to facilitate economic growth in northeast Mississippi and northwest Alabama using the transportation opportunities resulting from the Tennessee-Tombigbee Waterway. Focusing initially on the wood resource, TVA identified foreign markets for wood products and assisted area producers in export market penetration; created a long-term development plan to build a solid base for the wood products industry; and developed activities to enhance the transport of wood products on the waterway.

TVA established a network of State and university cooperators that works with individual companies to develop market plans, prepare quotations, and bid on international contracts. Assistance is being provided to a group of Mississippi and Alabama producers in forming a marketing cooperative to create sufficient product volume necessary to compete successfully for large contracts. Direct assistance to wood producers is provided in marketing, finance, production, transportation, and new technology to improve their ability to meet the price and quality demands of export markets. Information is disseminated on constantly changing transportation rates and regulations to ensure that quotations include the most accurate, cost-effective rates.

The Townlift program was conducted in 1984 and 1985, after which it was discontinued. The program was designed to help make the central business districts of small- and medium-sized communities more functional, efficient, and competitive. The program emphasized the economic revitalization of these areas and job creation in the services sector. Townlift worked to create community-based leadership and the tools by which private business could forge the local partnerships needed to expand commercial and retail opportunities, improve the urban tax base, identify new development potentials, enhance public infrastructure, and provide an organizational framework for sustaining business development.

A total of $25 million in public and private funds was invested in Townlift activities in 1984 in 68 communities in seven Valley States. This investment resulted in a leverage ratio for TVA costs of over 25:1. In 1985 a total of $7.7 million in public and private funds was invested in 27 Townlift projects. The benefit-cost ratio for the overall program was 8.5:1. Efforts in 1984 and 1985 resulted in the creation of 50 new businesses, 8 expansions, and the creation of 340 new jobs. Assistance from this program took a variety of forms over the past two years:

- In Memphis and Chattanooga, Tennessee, and Blue Ridge, Georgia, cooperative efforts with local officials were directed toward the rehabilitation of much-needed local housing units. In Canton, North Carolina, and Starkville Mississippi, efforts to provide or improve local housing focused on the reuse of old hotels.

- In Dover, Tennessee, assistance was designed to complement other efforts to assist the community in overcoming a very high local unemployment rate. Our role of assisting in the preparation of a downtown improvement plan was part of a wider effort by TVA and others to assist existing industries and to develop an overall community preparedness strategy. Results from this cooperative effort were obvious: The area's unemployment rate was reduced from 46 percent in January 1983 to 16 percent in September 1984.

- Elsewhere in the region, Townlift efforts were directed toward providing the missing "link" or ingredient that could, in combination with other local development efforts, result in a more viable community. In Fort Payne, Alabama, this meant studying ways to recycle an old unused textile mill and returning it to productive use. In Smithville, Tennessee, the renovation and constructive reuse of an old school gym as a community center was seen as a way to upgrade local public services.

Economic Development Activities

22. Mr. Bevill: What effort does TVA make to coordinate its economic development activities on a regionwide basis?

Mr. Dean: TVA economic development activities are coordinated directly with local, State, and Federal agencies and the private sector. TVA seldom, if ever, conducts an economic development program on its own. This approach avoids duplication on the front end and gets things done efficiently. Specific examples of the effort TVA makes to coordinate its economic development activities follow.

In 1982 TVA executed cooperative agreements with all seven Valley States that set forth our working relationships in the area of economic development. Through these general agreements and special-focus agreements in such areas as forestry and water quality, TVA is able to avoid duplication of State efforts and to jointly direct resources toward problems and opportunities of concern.

An initiative to develop a coordinated planning effort with the seven State governments of the region is also under way. This should achieve a greater impact from the combined application of TVA and State resources in economic development activities.

Economic development staff spend much of their time "in the field" talking to State and local leaders about the design and effectiveness of various cooperative efforts.

Meetings are held around the region with economic development constituencies. These meetings provide the opportunity for public and private sector leaders, as well as private citizens, to discuss their ideas directly with TVA. In the past 2 years more than 40 of these meetings have been held. The estimated 2,500 persons who attended represent all seven Valley States, numerous county and local governments, and many public and private organizations.

Building on the agency's success in working with the public and private sectors and volunteers to create jobs, TVA has initiated a program to train 160 power distributors that are located throughout the Valley to play leadership roles in coordinating, organizing, and carrying out local economic development activities. This new cooperative relationship will mobilize a relatively untapped resource in support of economic development. This will provide the distributors with economic development training, thus enabling them to identify local job creation opportunities and organize public and private development resources to take advantage of those opportunities. Distribuors are also provided with technical assistance in applying the principles learned in the training sessions to the solution of local problems.

A good deal of our economic development program effort centers around the creation of jobs through the attraction of new industry. TVA programs also demonstrate novel business incubation techniques as well as methods of retraining workers to meet industry's need for new, high technology skills. Through these efforts a cross-fertilization of ideas occurs and programs result that may be shared with others.

In a related effort, TVA works with various arms of the State governments to provide technical and financial assistance to universities, colleges, postsecondary institutions, and other public schools. Emphasis in these efforts is on instilling or improving skills of the un- and underemployed. Assistance includes the development of new curricula, task-oriented training programs for new and expanding industries, state-of-the-art teaching and learning techniques, and financial assistance to accomplish training and job-related education.

Economic Development Activities

23. Mr. Bevill: Would TVA's economic development activities be improved if there were greater regionwide planning of them?

24. Mr. Bevill: How could this be accomplished?

Mr. Dean: TVA has made a concerted effort to ensure the regionwide application and transferability of our programs in economic development, and we believe TVA has done a very good job of this given our limited resources.

Greater regionwide planning of economic development activities would require increased and improved coordination and targeting of TVA's and its regional partners' resources. TVA's greatest strength is our ability to marshal technical expertise from many different disciplines to design innovative solutions to economic development problems and needs. This permits us to play a very flexible and special role in regionwide planning and implementation for economic growth and prosperity.

An initiative to develop a coordinated planning effort with the seven State governments of the region is under way. This should result in a greater impact from the combined application of State and TVA resources in economic development activities.

TVA Revenue Activities

25. Mr. Bevill: Aside from the power program, what fees or revenues does TVA collect?

26. Mr. Bevill: What efforts has TVA made to increase revenues in the past several years

Mr. Dean: The national fertilizer development program generates from $20 to $25 million per year from the sale of experimental fertilizer products manufactured in pilot plant and demonstration-scale facilities at Muscle Shoals, Alabama, and distributed nationally for testing. These sales offset approximately 70 to 80 percent of the cost of the experimental manufacturing operation. Economies of scale and noncompetitive pricing of products will not allow this percentage to increase more than a few percentage points; however, few programs in the Federal Government can boast of a 70- to 80-percent cost-sharing arrangement.

In 1980 the national fertilizer development program had only a small amount of reimbursable contractual work. This was primarily with the International Fertilizer Development Center and amounted to approximately $100,000. In fiscal year 1986 TVA expects to obtain from industry sources more than $700,000 for fertilizer-related ativities.

In addition, we expect to have more than $6.6 million in nonfertilizer contractual work for others. This includes substantial funding by the Department of Energy and the Agency for International Development (primarily for biomass work), the Electric Power Research Institute, and others for special test work with our coal gasification (ammonia from coal) facility, and the Department of Defense for technical studies. We also provide services to the International Fertilizer Development Center costing several hundred thousand dollars.

TVA also has numerous cooperative agreements with land-grant universities and others to perform specialized chemical research and development and agronomic plot testing for new products and processes developed at the National Fertilizer Development Center.

In 1980 most natural resource and economic development programs were just beginning to explore opportunities for user fees, cost-sharing, and cooperative agreements. The past six years have seen a tremendous expansion in the use of these as means to get a greater return on Federal dollars invested in projects. Specific examples of these programs follow:

In addition, while not strictly fee generating, TVA has made an increased effort in recent years to obtain other participants in TVA programs that will help share the cost of these programs. Scores of these cooperative regional development efforts were listed in response to an earlier question.

TVA Revenue Activities

27. Mr. Bevill: What additional legislative authority would be necessary to increase revenues in fiscal year 1987?

Mr. Dean: The TVA Act provides TVA with all the authority and discretion it needs to establish and collect whatever user fees the TVA Board deems appropriate The Land and Water Conservation Fund Act (LWCFA), however, restricts the discretion TVA otherwise would have to charge for certain recreational uses and services. It prohibits the collection of admission fees for entrance into TVA recreation areas and restricts the types of uses for which charges may be established. Legislation to amend the LWCFA to remove the present restrictions on agency discretion to charge recreation fees would permit TVA to charge for the use of many facilities constructed at Federal expense for the benefit of those who make use of them but which lack sufficient improvements to be eligible for user fees under the LWCFA. Such uses could include boat ramps and partially developed campgrounds for which fees may not be charged at this time.

Land Between The Lakes

28. Mr. Bevill: Land Between The Lakes (LBL) is described as a national demon- stration area. Please explain the demonstrational aspects of LBL.

Mr. Dean: Demonstration has always been inherent in LBL's mission and structure. This is reflected in the flexibility in its management, explicit commitment to innovation, availability of a broad range of expertise, and physical characteristics that make LBL an ideal outdoor laboratory. These components integrate potential uses in order to better serve LBL visitors and to explore additional ways of sensible expansion of the benefits of all public lands and resources.

One of the best known demonstration projects at LBL is the eagle restoration project. That project, which began in 1980, is refining techniques and demonstrating that an endangered species—the bald eagle—can be conditioned for successful release into its former breeding range and, when an eagle matures, it will return to nest in the adopted area. This project has involved Federal and State agencies as well as private businesses and citizens. As a result, a nonprofit organization dedicated to eagle restoration will soon move its offices and restoration operations to LBL; together, we will be able to expand the eagle propagation effort throughout the southeastern United States. Other wildlife restoration research efforts and demonstrations have resulted in several State wildlife agencies initiating projects to reestablish once Consortia, seminars, and training are conducted annually to transfer the knowledge gained at LBL to participants from across the Nation.

Land Between The Lakes

29. Mr. Bevill: Please describe the natural resource management program at LBL and its importance in the overall operation of the area.

Mr. Dean: LBL utilizes an intensive multiple-use planning and management philosophy to produce a diverse array of benefits to the public. These benefits include the abundant recreational and educational opportunities provided by developing forestry, fisheries, and wildlife resources, as well as operating programs and facilities to accommodate public users.

These activities are conducted as a national demonstration of how multiple-use management of public lands yields substantially greater benefits than other management schemes. For example, LBL is presented as a showcase for multiple-use natural resource management in an international training program for officials of developing countries conducted by the USDA, the Agency for International Development, and the United Nations Educational, Scientific, and Cultural Organization.

Forests occupy over 150,000 acres of LBL. These lands are managed to provide a balanced supply of food and cover for wildlife, to complement outdoor recreation and environmental education uses, to upgrade forest composition and quality, and to improve the aesthetic appearance of the forest. Areas are also set aside as old growth stands or as unique natural areas. Each year some 8 million board feet and 6,000 cords of timber are harvested. These operations benefit the surrounding economy by providing more than 100 full-time private sector jobs with an annual payroll exceeding $1 million.

Open lands occupy about 12,000 acres of LBL. Of this, some 4,000 areas are farmed under sharecropping arrangements, which provides $300,000 in economic benefits to the surrounding area. The remaining open land acreage is managed primarily for wildlife habitat.

Fish and wildlife management activities are conducted in cooperation with State fish and wildlife agencies of Kentucky and Tennessee, the U.S. Fish and Wildlife Service, and many private conservation groups. Stocking, access development, placement of fish attractors, and other management practices are used throughout LBL.

A variety of management practices are used to provide hunting and other opportunities for visitors. Over 200 days of hunting are allowed each year. LBL has seasons for waterfowl, deer, turkey, and other game species. Programs are under way to restore once native species such as the bald eagle, osprey, river otter, and ruffed grouse. The wildlife populations and resulting harvest rates at LBL are similar to and, in many cases, higher than other areas managed principally for wildlife.

LBL's resource management program serves as a model for Federal, State, local government, and private lands.

LBL, in conjunction with the U.S. Department of Agriculture (USDA), currently has a large-scale, four-year pilot project under way to determine the most effective methods for controlling ticks—a growing health and pest problem. Results of this research should have application in parks, recreation areas, wildlife refuges, and on private lands throughout the Nation.

In addition, LBL programs focus on providing training to preprofessionals and professionals and in disseminating the results of research and development efforts. LBL provides leadership training for future professionals in the fields of resource management, recreation, and environmental education. Our student intern program, postgraduate program, and university consortia series pave the way in this effort to transfer demonstrations and technology to other organizations.

LBL also responds to identified needs from practicing professionals, ranging from recreation specialists to law enforcement experts, and serves as a training center. Working with private and public agencies and organizations, LBL staff have designed and implemented a variety of seminars and workshops building on LBL's experience and expertise. Examples include:

- A resident managers colloquium, developed in 1982, for managers and program personnel associated with the operation of group camps. The program format capitalizes on the experience of the participants and the laboratory nature of

LBL in identifying solutions to common concerns and problems. The first colloquium was so popular that it has now become an annual event and attracts professionals from all over the country.

- In 1984, because of the high incidence of deaths and accidents sustained in water-based recreation, LBL initiated the first water safety seminar aimed at State, Federal, and municipal agencies. The seminar was held to provide a forum for discussion of water recreation trends, problems, and solutions including safety, liability, planning, maintenance, and marketing. The National Water Safety Congress, Tennessee Recreation and Parks Association, Tennessee Department of Conservation, University of Tennessee, and the American Red Cross cosponsored the event. Five States were represented, and the conference was so successful that a expanded version is being planned for 1986.

- For the past three years LBL has sponsored a workshop for parks and recreation law enforcement personnel. This year we are expecting over 100 participants from Federal, State, and local law enforcement agencies all across the Nation.

The combination of research, demonstrations, and training makes LBL a unique and important national asset.

Land Between The Lakes

30. Mr. Bevill: Could TVA transfer responsibility for LBL in FY 1987 as proposed in the budget?

Mr. Dean: No. No other organization or entity, Federal, State, local, or private has expressed an interest in operating LBL. The proposed fiscal year 1987 budget provides no appropriated funding for operation of LBL. Under this proposal, all facilities used by the general public would be closed and all wildlife improvements, hunting, and forest management activities would be eliminated. The maintenance and upkeep of 420 miles of roads and 100 miles of trails would also be eliminated. As no protection or security would be provided, deterioration, vandalism, and unsafe conditions would flourish. In the short term, the Government's $80 million investment in LBL would substantially and quickly erode. In the longer term, all but the land base would be completely lost.

Land Between The Lakes

31. Mr. Bevill: Does LBL have sufficient staff resources to properly operate and provide security for its facilities?

Mr. Dean: The fiscal year 1986 budget for LBL is at a minimum level that does not provide for the operation, maintenance, and security of all facilities. It has also meant a compromise to LBL's commitment to nationally significant demonstrations. However, in these austere times we are still able to keep most of the facilities open to the public while continuing to maintain an adequate level of security. Recently increased user fees have helped greatly in taking up the slack in appropriations. But we see no immediate opportunities to significantly increase fees above current levels.

Land Between The Lakes

32. Mr. Bevill: What authority does TVA have to collect fees or revenues for the use of LBL facilities?

Mr. Dean: The TVA Act provides TVA with all the authority and discretion it needs to establish and collect whatever fees or revenues for the use of LBL facilities that the TVA Board deems appropriate. The only limitation on such discretion is the Land and Water Conservation Fund Act which requires TVA to charge fees for some recreational uses and prohibits the collection of admission fees or fees for certain other uses.

Land Between The Lakes

33. Mr. Bevill: What additional authority would be made available to enhance revenues at LBL?

Mr. Dean: While the TVA Act provides TVA with all the authority and discretion it needs to produce revenues at LBL, legislation to amend the Land and Water Conservation Fund Act to remove the present restrictions on agency discretion to charge recreation admission and use fees would enhance revenues at LBL. Fees for boat ramps and partially developed campgrounds developed at Federal expense for the benefit of individual users could then be charged.

National Fertilizer R&D Program

34. Mr. Bevill: What is the primary thrust of TVA's National Fertilizer Development program?

Mr. Dean: TVA is the world's undisputed leader in fertilizer research and development. In the past half-century TVA has been responsible for 75 percent of the fertilizer technology used today. With fertilizer accounting for at least 40 percent of agricultural production, the U.S. has been able to grow an abundance of food and fiber for its own people as well as for export. TVA's National Fertilizer Development Center is the centerpiece of a highly successful Federal-State-private sector partnership that combines research, development, and commercialization of affordable, effective, energy-efficient, and environmentally sound fertilizer processes and products.

The program is geared to adapt to change—whether in the economy, resource availability, or public policy—and to accelerate positive change in industry and farming practices. Accordingly, TVA's research program develops efficient techniques to recover and process lower grade indigenous phosphate ores. It makes production of both conventional and new fertilizer materials more energy efficient, less polluting, and economically viable. Another research priority is to ensure that fertilizers are compatible with diverse agronomic needs and farming practices. TVA also conducts research on improving efficient crop use of fertilizer nutrients, especially costly to produce nitrogen. Finally, to promote and accelerate the transfer of research results, TVA pursues longstanding and productive working relationships with industry firms to test the agronomic and engineering qualities of experimental products and to produce sufficient amounts of the new products to create and evaluate market acceptance.

National Fertilizer R&D Program

35. Mr. Bevill: How does TVA carry out its fertilizer development responsibility?

Mr. Dean: TVA's past impact on fertilizer technology and fertilizer use—in the U.S. and the world—is well documented. Its research has yielded a series of process and product innovations that has led to better and more economical fertilizer technology. And TVA has effectively promoted the sound use of improved fertilizers on the farm.

TVA has the Nation's only program dealing with a wide spectrum of fertilizer research. Basic research lays the foundation for additional scientific advances. Greenhouse research with products made in small amounts in laboratories suggest potential uses. Integrated research systems flow through bench-scale equipment and progress to larger research units. Field testing in cooperation with universities and the fertilizer industry confirms performance expectations and identifies crop, soil, and climatic conditions where a new technology best fits. Experimental products provide an opportunity to complete process testing and initiate commercialization. TVA staff works closely with university researchers and educators, members of the fertilizer industry, farmers, and others to update tham on research progress, help integrate new technology into ongoing systems, and consider research needs and priorities.

The American farmer and the consumer are ultimate beneficiaries of TVA's research. In fact, most fertilizers made in the U.S.

are derived from TVA technology. This technology has been one of the keys in America's increasingly efficient and productive agriculture. It has helped keep food in plentiful supply and reasonable in cost. The wise and prudent use of fertilizers is helping each farmer provide food and fiber for 80 people today, compared with 26 people in 1960.

The effectiveness of TVA's fertilizer program reflects its pragmatic orientation. The staff is an integrated, highly trained, multidisciplined team—chemists, engineers, soil scientists, economists, educators, and others. Commercialization of promising new technology is achieved by close cooperation with the industry.

The program recognizes that fertilizer is a strategic resource for attaining national food, fiber, and trade objectives. It also recognizes that the inherent nature of fertilizer-related technology and the variation in response to fertilizer use limit the potential for individual entities to recoup major R&D investments. Thus, the TVA program integrates a unified fertilizer R&D effort with national concerns. The National Fertilizer Development Center is the only public sector facility in the U.S. that combines agricultural and industrial research, is national in scope, and employs a Federal-State-private sector partnership for technology development and transfer.

National Fertilizer R&D Program

36. Mr. Bevill: How is the NFDC funded?

Mr. Dean: Research is funded primarily by tax dollars appropriated by Congress (approximately 59 percent) supplemented by the sale of experimental fertilizers and other miscellaneous income in the technology transfer program (approximately 34 percent). Also, NFDC has reimbursable arrangements with other agencies, such as DOE, AID, DOD, and EPRI that amounts to about 7 percent of the funding base.

National Fertilizer R&D Program

37. Mr. Bevill: Has TVA considered alternative approaches to this funding method?

Mr. Dean: Yes, in our fiscal year 1986 funding base we have included an estimated $715,000 for fertilizer research and development to be funded from industry sources as recommended by the Grace Commission. We are giving increasing emphasis to innovations that will result in industry funding for our programs, particularly in the fertilizer introduction program.

National Fertilizer R&D Program

38. Mr. Bevill: Describe alternative funding approaches.

Mr. Dean: The most practical alternative funding approach would be an excise tax on fertilizers. A tax of about $1 per ton on all fertilizers distributed in the Nation would adequately fund TVA's research and development program. Another alternative would be a fee on fertilizers imported into this country. Currently tariffs on fertilizer products exported from the U.S. total nearly $200 million annually, while there are no fees on fertilizer imports into the U.S. Another alternative is outside funding. We have already initiated a user fee system for some services and are looking for tolling opportunities and joint venture possibilities. OACD management has met with leaders of the fertilizer industry to discuss the prospect for additional industrial funding. There are major barriers to this type of funding however. Foremost is the fertilizer industry position that their Federal taxes already pay for the work of the NFDC as well as other agricultural-related research. Another reason the industry is reluctant to provide joint venture funding is its low profit nature without hope of much recovery in the near future.

Natural Resources

39. Mr. Bevill: What is the current backlog of dam safety modifications on TVA facilities? When will all of these be completed?

Mr. Dean: We have identified 21 dams which were not consistnt with current safety guidelines. One was corrected by modifications to other upstream dams. Of the remaining 20, modifications will be essentially complete on seven dams by the end of fiscal year 1986. Modifications will be in progress at another three dams.

At this time, the program is within budget and, except for Nottely Dam, is on schedule. Nottely modifications are on hold pending approval of funds from the Federal Highway Administration to provide a required wider bridge over the spillway.

The remaining ten projects will be started during the next decade. Our funding needs in fiscal year 1988 are fairly consistent with fiscal years 1986 and 1987 at about $3.4 million in new appropriation budget authority. However, as we begin work on the larger mainstream dams, our funding needs for fiscal years 1989 through 1992 will increase to about $7 to $10 million each fiscal year in new appropriation budget authority. Funding requirements will then decrease as the program approaches completion in fiscal year 1994.

Natural Resources

40. Mr. Bevill: What will be the impact of reducing the funding for resource management and development support from $4,970,000 in fiscal year 1986 to $2,250,000 in fiscal year 1987? What are involved in these activities?

Mr. Dean: This reduction would eliminate all TVA air resource management activities, including a new four-year Valley-wide indoor/outdoor toxic air assessment, technical assistance to regulatory agencies and industry in identifying and resolving air quality problems, public information efforts of Valley air quality problems and issues, and Valley-wide background ambient air quality monitoring. These monitoring data, used for research, regulation, and economic/industrial development, are the only measures in the southeastern United States of background levels of regulated pollutants. Three acidic deposition monitoring stations that are part of the National Acidic Precipitation Assessment Program (NAPAP) National Trend Network would also be discontinued.

Environmentally safe disposal of both solid and hazardous waste continues to be a critical issue of national concern. Inadequate and improper disposal methods can create long-term problems that may be very difficult and extremely expensive to correct once the damage has been done. At the proposed funding level, waste management technical assistance and demonstrations for local government and industry in waste collection, materials handling and processing, recycling and energy recovery, disposal, and systems management would be eliminated. Our previous work with small industry and farm waste management has been particularly significant. Programs aimed at reducing hazardous waste generation through public information/education would be terminated, as would technical assistance to small-quantity generators of waste that is designed to protect both surface and groundwater. Technology transfer efforts aimed at professional managers of hazardous waste would be abandoned.

Technical assistance to small communities experiencing water and wastewater treatment problems would be eliminated. This would occur at a time when the need to solve water quality problems and community growth problems due to poor wastewater treatment have never been greater. TVA is constructing artificial wetlands at three western Kentucky towns as a demonstration of an affordable wastewater treatment technology, but funds would not be available for monitoring the effectiveness of the systems. These data are critical to the demonstration, which has already generated both national and international interest.

Mapping services, which are coordinated with the U.S. Geological Survey national mapping program, would continue to produce and revise Valley topographic and metric base maps. Activities also would be continued which ensure that TVA complies with Federal and State statutes and TVA's own responsibilities for carrying out reviews under Section 26a of the TVA Act. Activities to identify and protect historic and prehistoric sites on TVA lands would be greatly reduced, increasing the chance for destruction or theft of those irreplaceable resources.

Acidic deposition research activities involving assessment of forest impacts would be continued at the level established in coordination with NAPAP.

The objectives of these activities reflect why flexibility is essential for TVA to discharge its responsibilities. Air quality monitoring, acidic deposition assessment, waste management, remote sensing, and mapping applications are not independent ends themselves. They represent problem areas and technologies that are crucial to the Valley region and the Nation. They are also areas where great emphasis is placed on seeking cooperative approaches to solutions with national impact. This attitude has resulted in TVA becoming a national leader in developing cost-effective toxic air monitoring technology, a unique supplier of regionwide air quality baseline data, a national leader in demonstrating affordable wastewater treatment technology such as artificial wetlands for small communities, a national model for hazardous waste information/ education programs, an innovator in remote sensing applications, and a credible local researcher in acidic deposition issues.

Natural Resources

41. Mr. Bevill: What is involved in the water resources program? What will be the impact of reducing the funding from $8,053,000 to $3,500,000 in 1987?

Mr. Dean: The water resource program includes four major components: regional water management; fisheries resource management; reservoir releases improvement; and floodplain management. Each program element is designed to address critical water resource problems facing the Tennessee Valley and the Nation.

Over the last two years TVA has identified and prioritized water resource problems in the Tennessee Valley. Projects to demonstrate solutions to these problems are under way. To reduce TVA funding so significantly would bring to a halt several of these important demonstrations that are needed to show the rest of the Nation that tough water resources problems can be solved.

More specifically, funding reductions would eliminate TVA demonstrations of how local governments can protect wells and springs from contamination and ensure safe water supplies. Efforts to create a long-term groundwater protection ethic through the education of school children would also be eliminated.

Rehabilitation of water quality in a river basin beset by pollution problems such as municipal sewage, agricultural soil erosion, animal waste, abandoned mine lands, and failing septic tank systems would be eliminated. TVA is currently demonstrating that a cooperative approach among Federal, State, and local agencies to target the resources of their existing programs to critical areas will result in the most effective control of point and nonpoint sources of pollution.

Efforts to ensure safe dependable water supplies in rural areas suffering from drought, contamination, and management problems would be eliminated. TVA is demonstrating that small communities can effectively manage their water supply needs through advanced planning for drought, interconnection of small systems, improved financial management, and education of water customers.

The resolution of critical water quality problems identified in north Alabama reservoirs would be eliminated. Contamination of fish by PCB and pesticides, leachate from abandoned landfills, and groundwater contamination by septic tanks are the types of problems which would go uncorrected.

Aquatic biological resource activities would be eliminated. Most important would be the loss of information on the health of fish and aquatic life. No other agency gathers such information on our reservoirs. TVA uses this information to carry out its management responsibilities necessary to ensure protection of aquatic life and habitat in the reservoirs. The information TVA gathers is also shared to ensure that other agencies with different responsibilities in the watershed are informed of problems under their jurisdiction.

Improvement of reservoir releases would be hindered because evaluations to determine the effectiveness of the methods to be employed at six projects could not be performed. Since the methods being implemented are developmental, these evaluations are critical to the continued progress in this new technology. The low dissolved oxygen problems this new technology cures exist in private and public reservoirs across the Nation and not just the Tennessee Valley.

TVA floodplain management assistance activities would also be eliminated. These activities help communities and others plan development so that susceptibility to flood damage is minimized. Without floodplain data and guidance, public officials and individual decisionmakers would not have adequate information upon which to make decisions so as to avoid flood-prone areas. The resultant increase in flood damages would generate public pressure for structural flood control works, alternatives which are not as attractive economically or environmentally. In addition, costs to government for fighting floods, flood insurance claims, and postflood recovery measures would increase.

Natural Resources

42. Mr. Bevill: How will the $20,593,000 requested be used for reservoir system operations in fiscal year 1987? What will be the impact of the reduction from 1986 levels and what efficiences of operation can you take to make up the difference?

Mr. Dean: The proposed funding level would result in a reduced level of operation of the TVA system of 38 multipurpose dams, reservoirs, and associated lands from previous years. The basic tenets of flood control, navigation, and hydroelectric power production would all be met.

Planning for navigation improvements to ensure safe operation of the waterway and locks will be continued. Secondary channel navigation aids and boat hazard markers will be serviced and power to operate the locks will be provided. The effectiveness of the reservoir system in major floods will be evaluated. Analysis of major storms to support operational strategies in major floods, maintenance of a flood information management system, and the capability to define potential future flooding in the Valley will be continued. The storage and release of water through the multipurpose reservoir system will be managed for all intended purposes. Flow forecasts and release schedules will be prepared. Alternative operating guides to enhance recreational uses will be tested. Measures to control mosquitoes and aquatic weeds will be limited to areas with the most acute problems.

A resource data base for the Chickamauga Reservoir land use plan will be developed. Operation and maintenance of roads, grounds, recreation areas, and visitor and maintenance buildings on dam reservations, as well as maintenance of earthen dams, will be performed. Operation and maintenance of essential nonrecreation facilities off the dam reservations, and management of lands and landrights held by TVA on 11,000 miles of shoreline along its reservoirs, will continue. Security will be provided to these projects. Detailed dam safety studies will continue to be conducted. Long-term maintenance of dams and associated facilities will be performed and commitments for highway and railroad embankment protection will be carried out.

Significant reductions from 1986 would, however, be felt in several areas. Our flood hazard analysis program maintains an essential capability to make timely and accurate flood hazard analyses for use by programs at all levels of government. The impact of this reduced level would be that analyses would be based on previously collected information that reflects former watershed and developmental conditions. In many areas significant development has changed watershed runoff characteristics. Inability to collect new field data when floods occur would severely handicap the capability to define flood hazard in the future. The reduction would also eliminate our ability to measure how potential flood damages in the region are changing over time. The evaluation of major storm configurations needed in selecting operational strategies in major floods would also be curtailed.

The Chickamauga Reservoir land use plan would not be completed on schedule. Operation and maintenance of all recreation areas located off of dam reservations would cease. This includes 26 campgrounds, 62 informal recreation areas, 27 boat launching ramps, and 12 trails.' Field evaluation of land use and Section 26a requests would be limited to major transactions. Only major encroachments and violations could be handled. Surveillance and compliance checks on agricultural licenses would be reduced, resulting in increased contract violations and land abuse. Timber stand improvement and reforestation activities would be discontinued. Development of management prescriptions for some 10,000 acres of forest lands would be virtually eliminated, limiting future revenue opportunities.

TVA is constantly exploring ways to reduce operating costs. Studies are currently being conducted to determine if the white amur can effectively reduce infestations of aquatic weeds in the reservoirs. If proven effective, this has the potential to significantly reduce associated treatment costs. Procedures for extreme summer drawdowns of reservoir levels that are designed to dry out aquatic weeds continue to be refined. Experiments with this procedure over the last few years have been very promising. We continue to evaluate the need for and technology requirements of data collection used to regulate water through the reservoir system. A project is now under way to replace several remote, high maintenance data collection stations with new, more efficient equipment. Efforts continue to be made to increase income to partially offset operating and maintenance costs and to initiate cost-sharing agreements with the public and private sectors. Recreation user fees have been increased. Administrative costs associated with land use transactions are now recovered. Efforts are made each year to transfer recreation areas to others and undeveloped reservoir tracts are marketed for commercial recreation development.

While these cost reduction efforts have been successful, it is not possible to implement efficiencies of a magnitude that could offset the reduction proposed without some significant programmatic impacts. As a result, the reductions previously described would be necessary in fiscal year 1987.

Natural Resources

43. Mr. Bevill: Describe the land and forest resources program. What will be the impact of the reduction from $4,130,000 in fiscal year 1986 to $550,000 in fiscal year 1987?

Mr. Dean: TVA land and forest activities enable others to assume greater responsibilities in natural resource development and enhance their responsiveness to environmental and economic interests. TVA roles are to develop and transfer new technology; to identify viable initiatives for independent or joint State, local, and private action; and to turn the concepts of balanced use of the region's resources into practical applications. Activities that have applicability beyond the Valley region are given greatest consideration. The component land and forest resources programs are forestry, wildlife, recreation, and environmental/energy education.

The forestry program, in collaboration with other Federal and State agencies and the private sector, works to ensure that the timber production potential of Valley forests is used to provide economic and social benefits for the region and the Nation. The wildlife program develops and demonstrates technology designed to attain compatibility between resource conservation and economic growth. TVA is the Nation's leader in the restoration of wildlife species to their historic ranges. Dewatering areas are operated in cooperation with Valley States and the U.S. Fish and Wildlife Service to provide 15,000 acres of invaluable wintering habitat. Recreation program emphasis is on improving management and facilities at existing TVA recreation areas, and demonstrating methods for making reservoir recreation opportunities available to a wider spectrum of the public. The environmental/energy education program provides services to incorporate training on environmental, energy, and economic systems into the curricula of schools and works with the general public and citizen organizations to provide educational programs on these topics.

Under the proposed budget, all activities within the land and forest program would be eliminated except for the operation of 10 dewatering areas adjoining the main reservoir system in the western Tennessee River watershed. Specific activities that would be eliminated include (1) development of a supply-demand model for industry siting impacts on timber resources; (2) forest resource data encompassing all Valley region counties; (3) cooperative efforts with State agencies in forest management planning; (4) technical support for TVA-State cooperatively managed wildlife areas; (5) development and demonstration of restoration techniques for wildlife species, including great egrets, osprey, golden eagles, peregrine falcons, and river otters; (6) identification and acquisition of river access sites on tributary streams; (7) transfer of existing TVA recreation areas to others and marketing of undeveloped tracts for commercial recreation development; and (8) completion of a regional, university-based environmental/energy education network designed to support local schools with programs to increase environmental understanding.

Natural Resources

44. Mr. Bevill: How many TVA jobs will be reduced on the natural resources program if the fiscal year 1987 budget is accepted?

Mr. Dean: The full-time equivalent (FTE) of 452 annual salary policy (ASP) jobs would be eliminated from TVA's proposed natural resources program.

Additional Information

45. Mr. Bevill: The Grace Commission issued several reports a number of years ago on agency management and operations. Could you tell the committee what actions you have taken to address the recommendations of the Grace Commission and what the results have been?

Mr. Dean: The Grace Commission made numerous recommendations to TVA on many aspects of this agency's operations--from the management of its power program to the running of the National Fertilizer Development Center. Many of the recommendations contained in the report by the Grace Commission were issues TVA had already attacked and was working on. Among the principal recommendations and the follow-up by TVA are the following:

- Third-party professional assistance has been obtained, as proposed, and is being utilized to streamline the operation of the power program and to improve the management of the nuclear program, now under the guidance of retired admiral Steven A. White.

- As proposed, staff reductions have taken place, in both the power program and the national fertilizer development effort. In addition, the personnel division has sharply reduced its payroll, absorbing a larger percentage cutback than the agency as a whole.

- While TVA agrees with the Grace Commission that certain staff salaries should be raised to attract competent employees to critical positions, boosting the salary cap is a legislative issue.

- TVA is trying to locate outside sources of funding for its National Fertilizer Development Center, as advocated by the Commission. There has only been limited success thus far. Over time, however, TVA believes a larger proportion of the fertilizer R&D and introduction budgets can be funded through private sector collaboration. In TVA's opinion, appropriated funds will always be required due to the experimental nature of the NFDC effort.

It should be noted that Congress has viewed the fertilizer research program as benefiting the entire Nation and not merely commercial users of TVA technology, and this is why a portion of the program has been funded with Federal contributions. Although the most practical alternative funding approach would be an excise tax on fertilizers, the Administration has opposed legislation invoking such a levy. Another alternative might be a fee on fertilizers imported into the United States.

Additional Information

46. Mr. Bevill: Provide a summary table of the Gramm-Rudman-Hollings sequestrations, by appropriation account, and a copy of agency guidance with regard to how reductions were to be made.

Mr. Dean: With respect to the power program, the 4.3 percent reduction was levied against an administrative expenses base in 1986 of $68,643,000. This resulted in a sequestration of $2,952,000. The attached table shows reductions to appropriations-financed activities. The final piece is a memorandum from the Manager of Planning and Budget to TVA's program office managers soliciting information on the impact of Gramm-Rudman-Hollings on their respective programs.

APPROPRIATIONS-FINANCED BUDGET REDUCED BY GRAMM-RUDMAN-HOLLINGS (G-R-H)

(In thousands of dollars)

CAPITAL INVESTMENT	Operating Plan Budget	G-R-H Reduction	Revised Operating Plan Budget
New Lock at Pickwick Dam	709	0	709
Columbia Dam and Reservoir	863	0	863
Dam safety modifications	5,942	(85)	5,857
Additions and improvements	3,957	(93)	3,864
Recreation facilities	250	(10)	240
Land Between The Lakes	110	(4)	106
Chemical facilities	5,391	(200)	5,191
North Alabama Coal to Methanol	1,935	0	1,935
General facilities	2,359	(81)	2,278
Total capital investment	21,516	(473)	21,043
OPERATING EXPENSES			
Natural Resources:			
Water resources	8,376	(323)	8,053
Reservoir systems operations	23,691	(920)	22,771
Land and forest resources	4,300	(170)	4,130
Resource management and development support	5,160	(190)	4,970
Land Between the Lakes	6,985	(273)	6,712
Total Natural Resources	48,512	(1,876)	46,636
Economic Resources	15,505	(609)	14,896
Agricultural Resources Development	5,136	(205)	4,931
National Fertilizer Development:			
Fertilizer R & D	16,900	(625)	16,275
Fertilizer technology development	12,605	(520)	12,085
Ammonia from coal	200	0	200
Hardwood fuels research	3,400	(135)	3,265
Total National Fertilizer Development	33,105	(1,280)	31,825
General Services	1,545	(29)	1,516
Total Operating Expenses	103,803	(3,999)	99,804
Jobs bill	81	0	81
Total Appropriations	125,400	(4,472)	120,928

Those listed

Larry H. Edwards, Manager of Planning and Budget, E6C7 C-K

January 15, 1986

IMPACT OF GRAMM-RUDMAN-HOLLINGS (G-R-H) ON APPROPRIATED PROGRAMS

The effect of G-R-H on TVA's appropriated programs in fiscal year 1986 is a reduction of the $104 million in new budget authority appropriated in 1986 ($104 million in new BA plus $9 million in carryforward equals $113 million total appropriation) of 4.3 percent, or $4,472,000. The attached table shows the specific reductions to be taken and the revised total budget.

While each line item on the table must be reduced by the amount shown, there is, generally speaking, discretion within each line item to achieve the reduction as TVA wishes. The exceptions are within economic resources, where the Oklahoma project and the robotics center, since they were specifically mentioned in the conference report language, must take the pro rata share and no more. Within the other line items the reductions can be levied against one or more activities, so long as the total reduction needed in that line item is achieved.

Each lead office is to prepare a table at the control budget level of detail, with accompanying narrative describing for the Board how it proposes allocating the reductions within each line item. The narrative should provide in general the strategy employed in taking the reductions as well as the specific impacts associated therewith. To the extent that any of the proposed reductions could be considered controversial, alternative reductions should also be discussed.

This material should be provided to this office no later than C.O.B on Wednesday, January 22. If you have any questions, please call Bruce Long or your program analyst.

Larry H. Edwards

B. J. Bond, 1E61 OCH-K
J. T. Shields, A214 NFDC-M
R. C. Steffy, Jr., MR 6N 36A-C
S. A. White, LP 6N 38A-C

BDL:CLS
Attachment
cc (Attachment):
    R. A. Matson, MR 5N 73B-C
    W. L. McDonald, A216 NFDC-M
    E. W. Rauch, 1D50 OCH-K
    J. G. Stewart, E12B18 C-K
0084G

OPERATING PLAN BUDGET
REDUCED BY
GRAMM-RUDMAN-HOLLINGS

CAPITAL INVESTMENT	OPER PLAN BUDGET	G-R-H REDUCTION	REV OP PLAN BUDGET
New Lock at Pickwick Dam	709	0	709
Columbia Dam and Reservoir	863	0	863
Dam safety modifications	5,942	(85)	5,857
Additions and improvements	3,957	(93)	3,864
Recreation facilities	250	(10)	240
Land Between the Lakes	110	(4)	106
Chemical facilities	5,391	(200)	5,191
North AL Coal to Methanol	1,935	0	1,935
General facilities	2,359	(81)	2,278
Total Capital Investment	21,516	(473)	21,043
OPERATING EXPENSES			
Natural Resources:			
Water resources	8,376	(323)	8,053
Reservoir systems operations	23,691	(920)	22,771
Land and forest resources	4,300	(170)	4,130
Resource mgmt and dev support	5,160	(190)	4,970
Land Between the Lakes	6,985	(273)	6,712
Total Natural Resources	48,512	(1,876)	46,636
Economic Resources	15,505	(609)	14,896
Agricultural Resources Development	5,136	(205)	4,931
National Fertilizer Development:			
Fertilizer R & D	16,900	(625)	16,275
Fert technology development	12,605	(520)	12,085
Ammonia from coal	200	0	200
Hardwood fuels research	3,400	(135)	3,265
Total Nat Fert Dev	33,105	(1,280)	31,825
General Services	1,545	(29)	1,516
Total Operating Expenses	103,803	(3,999)	99,804
Jobs bill	81	-	81
Total Appropriations	125,400	(4,472)	120,928

0088G

Additional Information

47. Mr. Bevill: Provide a summary table showing employment levels for the agency in the same format that appears in House Report 99-195 on page 8.

Mr. Dean: The information is attached.

	Estimated					
	1985		1986		1987	
	ASP*	Total FTE**	ASP*	Total FTE**	ASP*	Total FTE**
CAPITAL INVESTMENT						
New lock at Pickwick Landing Dam	9	52	2	13	-	-
Columbia Dam and Reservoir	15	42	10	30	-	-
Dam safety modifications	12	35	17	88	7	60
Additions and improvements	10	48	17	78	7	50
Water resources	1	1	-	-	-	-
Land and forest resources	1	3	1	2	-	-
Land Between The Lakes facilities	1	1	1	1	-	-
Economic resources	1	1	-	-	-	-
Fertilizer test facilities	39	75	34	69	30	62
Ammonia-from-coal facility	3	8	-	-	-	-
North Alabama coal-to-methanol project	13	51	8	45	-	-
General facilities	10	31	11	27	5	20
Total capital investment	115	348	101	353	49	192
OPERATING EXPENSES						
NATURAL RESOURCES						
Water resources	160	179	145	173	74	100
Reservoir system operations	534	661	536	589	367	575
Land and forest resoruces	57	57	48	48	3	3
Resource management and development support	69	76	68	71	34	50
Land Between The Lakes	140	235	125	200	-	-
Total natural resources	822	1,208	922	1,081	478	728
ECONOMIC RESOURCES						
Economic resources	95	100	88	100	-	-
Community resources	12	21	-	-	-	-
Total economic resources	107	121	88	100	-	-
AGRICULTURAL RESOURCES DEVELOPMENT	31	31	23	23	-	-
NATIONAL FERTILIZER DEVELOPMENT						
Fertilizer research	174	174	171	185	132	132
Technology introduction	304	568	294	528	275	540
Ammonia-from-coal process	5	9	1	1	-	-
Hardwood fuels research	38	47	38	38	-	-
Total national fertilizer development	521	818	504	752	407	636
GENERAL SERVICES	7	20	10	21	9	20
Total	1,603	2,546	1,648	2,330	943	1,576

*Annual salary policy
**Full-time equivalent

Additional Information

48. Mr. Bevill: Provide a summary table showing the breakdown of appropriations by capital and operating expenses in the same format that appears in House Report 99-195 on page 7.

Mr. Dean: The chart is attached.

Summary of Budget Financed from Appropriations
(Obligations in thousands of dollars)

	1985	1986		1987	
	1985 Actual	Before G-R-H	After G-R-H	TVA Request	President's Budget
CAPITAL INVESTMENT					
New lock at Pickwick Landing Dam	6,257	709	709	-	-
Columbia Dam and Reservoir	1,347	863	863	-	-
Dam safety modifications	1,203	5,942	5,857	2,610	2,610
Additions and improvements	2.454	3,957	3,864	2,358	1,500
Recreation facilities	219	250	240	250	-
Land Between The Lakes facilities	75	110	106	95	-
Floodplain management facilities	177				
Yellow Creek port	29				
Ammonia from coal	406				
Chemical facilities	7,668	5,391	5,191	5,050	4,400
North Alabama coal-to-methanol project	2,134	1,935	1,935	-	-
General facilities	1,472	2,359	2,278	2,052	1,333
Total capital investment	23,443	21,516	21,043	12,415	9,843
EXPENSES					
NATURAL RESOURCES					
Water resources					
Regional water management	4,376	4,775	4,576	4,400	2,612
Reservoir releases improvements	1,020	1,086	1,041	1,086	888
Fisheries resources	584	615	615	615	-
Floodplain management	1,911	1,900	1,821	1,900	-
Bristol water project	5,000	-	-	-	-
Total water resources	12,891	8,376	8,053	8,001	3,500
Reservoir system operations					
Navigation operations	1,369	1,683	1,618	1,625	1,479
Flood hazard analysis	543	500	478	520	350
Multipurpose reservoir operations:					
Water control opreations	2,123	2,293	2,193	2,398	2,398
Reservoir ecology	1,884	2,393	2,289	2,501	2,501
Reservoir lands planning	691	778	740	690	350

(Continued)

EXPENSES (Continued)	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
NATURAL RESOURCES (Continued)					
Reservoir system operations (continued)					
Multipurpose reservoir operations (continued):					
Dam reservations operation and maintenance	2,606	2,697	2,628	2,819	2,819
Reservoir land management	4,209	4,702	4,457	4,729	1,914
Plant protection and services to visitors	3,111	3,237	3,169	3,334	3,334
Dam safety analysis	1,319	1,565	1,501	1,629	1,683
Structures and equipment maintenance and improvement	3,003	3,843	3,698	3,805	3,765
Subtotal MRO	18,946	21,508	20,675	21,905	18,764
Total RSO	20,858	23,691	22,771	24,050	20,593
Land and forest resources					
Forest resources	2,513	1,850	1,775	1,850	–
Wildlife resources	1,018	915	880	915	550
Recreation resources	863	935	899	935	–
Environmental/energy education	540	600	576	600	–
Total land and forest resources	4,934	4,300	4,130	4,300	550
Resource management and development support					
Valley mapping and remote sensing	1,084	1,100	1,057	1,100	1,100
Conservation of public lands and waters	937	1,000	944	1,000	750
Regional air quality management	678	755	728	680	–
Acidic precipitation	–	400	400	400	400
Waste management	1,708	1,905	1,841	1,625	–
Total resource management and development support	4,407	5,160	4,970	4,805	2,250

(Continued)

		1986		1987	
EXPENSES (Continued)	1985 Actual	Before G-R-H	After G-R-H	TVA Request	President's Budget
NATURAL RESOURCES (Continued)					
Land Between The Lakes........	7,308	6,985	6,712	6,900	-
Total natural resources...........	50,398	48,512	46,636	48,056	26,893
ECONOMIC RESOURCES					
Navigation development and engineering assistance.......	1,315	1,150	1,120	1,150	-
Economic projects and demonstrations...............	3,975	5,925	5,685	5,050	-
Minority economic development.	1,265	810	928	810	-
Special opportunities counties and cities..................	5,649	3,000	2,875	3,000	-
Industrial skills development.	3,761	3,420	3,285	2,000	-
Tennessee-Tombigbee Waterway..	1,481	1,200	1,153	1,200	-
Total economic resources...........	17,446	15,505	15,046	13,210	-
COMMUNITY RESOURCES					
Townlift.....................	842	-	-	-	-
Community preparedness........	1,253	-	-	-	-
Total community resources...........	2,095	-	-	-	-
AGRICULTURAL RESOURCES DEVELOPMENT					
Innovative research.........	2,840	2,220	2,157	1,770	-
Market development..........	1,101	1,000	940	1,000	-
Preserving farmland productivity..............	1,772	1,916	1,834	4,436	-
Total ARD...........	5,713	5,136	4,931	4,436	-
NATIONAL FERTILIZER DEVELOPMENT					
Fertilizer R&D...............	14,564	16,900	16,275	19,300	10,430

(Continued)

EXPENSES (Continued)	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
NATIONAL FERTILIZER DEVELOPMENT (Continued)					
Fertilizer technology development					
Process research	4,109	6,900	6,615	6,880)	9,016
Product research	1,654	3,900	3.739	4,060)	
Experimental fertilizer production	7,171	1,805	1,731	1,445	1,189
Total fertilizer technology development	12,934	12,605	12,085	12,385	10,205
Ammonia from coal	6,435	200	200	–	–
Hardwood fuels research	4,037	3,400	3,265	3,400	–
Total NFD	37,970	33,105	31,825	35,085	20,635
GENERAL SERVICES					
Maintenance of bridges on TVA dams	516	721	721	609	609
Integrated regional resource management	–	129	129	–	–
Assistance to small disadvantaged businesses	100	100	100	–	–
Emergency preparedness	36	58	58	58	58
Other expenses	84	537	358	131	–
Total general services	736	1,545	1,366	798	667
Total expenses	114,358	103,,803	99,804	101,585	48,195
Jobs bill (P.L. No. 98-8)	-67	81	81	–	–
Other credits	-280	–	–	–	–
Total appropriations	137,454	125,400	120,928	114,000	58,038

(Continued)

FINANCING	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
Appropriations	125,000	104,000	104,000	114,000	58,038
Deferred appropriation	-9,000	9,000	9,000	-	-
Unobligated balance brought forward	33,854	12,400	12,400	-	-
Unobligated balance carried forward	-12,400	-	-	-	-
Gramm-Rudman-Hollings reduction (P.L. No. 99-177)	-	-	-4,472	-	-
Total financing	137,454	125,400	120,928	114,000	58,038

Additional Information

49. Mr. Bevill: Provide a summary table showing the prior three years estimated outlays and actual outlays, by appropriation account, and a table showing the fiscal year 1987 budget authority request and outlays associated with that request for the next five years. Provide this by appropriation account.

Mr. Dean:

Fiscal Year	Outlays from Appropriations (in thousands of dollars) President's Budget Estimate	Actual
1983	141,203	164,166
1984	130,113	166,814
1985	117,020	137,247

	($000)
Fiscal year 1987	
Budget authority request	58,038

Outlays Associated With a Fiscal Year 1987 Budget Authority Request of $58,038,000

Fiscal Year	($000)
1987	
1988	32,043
1989	25,995
1990	–
1991	–
1992	–
	–
Total	58,038

1. Mr. Myers: Will power rates change in 1986 or 1987? How much?

Mr. Dean: We anticipate that rates will stay at their current levels for fiscal year 1986. Fiscal year 1987 revenue requirements will be determined later this year. Although the amount is uncertain, it now appears likely that there will be an increase in the single-digit range.

2. Mr. Myers: What is the total amount of money invested by TVA to date in nuclear power projects that have been cancelled?

Mr. Dean: The total investment for the eight nuclear units which TVA has canceled totals $4,560 million.

3. Mr. Myers: What is the estimated loss of revenue from plants shut down during fiscal years 1985, 1986, and 1987?

Mr. Dean: The estimated fiscal year 1985 increases of fuel costs due to shutdown of the nuclear plants has been estimated at $40 million. Due to the uncertainty of when the nuclear units will return to service, no meaningful estimate can be provided for 1986 and 1987.

4. Mr. Myers: What is the total capital cost of the plants that are currently shut down, which you are managing to get along without?

Mr. Dean: Capital expenditures for Browns Ferry through 9/30/85 are $1,363,000,000, of which $219,000,000 is work in progress.

Capital expenditures for Sequoyah through 9/30/85 are $1,850,000,000, of which $102,000,000 is work in progress.

The total expenditures for both plants through 9/30/85 are $3,213,000,000.

5. Mr. Myers: What is the total amount paid by TVA in fines to NRC? Has TVA protested or appealed any of these fines? Were any reversed?

Mr. Dean: The total amount paid by TVA in fines to the NRC is $1,157,000. TVA has not protested or appealed any fine in total, but has asked for and been granted reductions of portions of fines.

9. Mr. Myers: What is the amount of demand charges paid for each of the past 20 years?

Mr. Dean: The aggregate capacity (demand) charges paid by DOE to TVA for fiscal years 1966 through 1985 are shown in the tabulation below. All fiscal year figures are based on a fiscal year beginning October 1 and ending September 30.

Fiscal Year	Demand Charges (In Thousands)
1966	$31,300
1967	30,006
1968	26,009
1969	20,967
1970	18,091
1971	23,231
1972	35,377
1973	47,006
1974	53,569
1975	57,975
1976	63,114
1977	73,283
1978	73,874
1979	78,756
1980	92,746
1981	141,763
1982	257,979
1983	261,209
1984	324,131
1985	387,042

10. Mr. Myers: What are total general administrative expenses (regardless of funding source) for fiscal years 1986 an 1987?

Mr. Dean: TVA's total budgeted administrative expenses for fiscal years 1986 and 1987 are:

	1986	1987
Funded by power and nonpower proceeds	$68,643,000	$76,145,000
Funded by appropriations	4.000,000	4,100,000
Total	72,643,000	80,245,000

11. Mr. Myers: Please provide 1986 and 1987 budgets specifically for:
- a. Headquarters budget
- b. Director's office
- c. Washington Office
- d. Travel
- e. Entertainment expenses

Mr. Dean: The information follows:

	In Thousands	
	1986	1987
a. Headquarters budget	$33,238	$34,966
b. Director's office	688	729
c. Washington Office	883	935
d. Travel*	1,046	1,136
e. Entertainment expenses	**	**

*Travel budget provided is for all headquarters staff.

**TVA does not provide funds for "entertainment" expenses. However, in hosting executive-level TVA visitors, meals and travel expenses are sometimes paid by the aency. In addition, meals and in some cases travel and lodging expenses are paid by TVA in connection with public meetings, constituency meetings, and special events when the agency is directly involved.

TVA occasionally exchanges gifts of nominal value with visiting foreign or domestic dignitaries. Gifts of this nature are valued at less than $100 and are presented by TVA Board members to the ranking dignitary of the delegation. Such gift giving normally occurs fewer than ten times a year.

1. Mr. Conte: Are you familiar with the provision of the fiscal year 1986 Energy and Water Appropriations Act that provides for a 25 percent Buy American differential in the procurement of EHV electrical equipment? Is it TVA's intention to comply with the requirements of that law?

Mr. Dean: TVA is familiar with the requirements of the provision of the Energy and Water Appropriations Act for fiscal year 1986 which establishes a 25-percent evaluation differential in connection with TVA's purchases of extra-high-voltage (EHV) power equipment as defined in the conference report on H.R. 2959. TVA is in compliance with the requirements of this law and, to date, has included a provision implementing the 25-percent differential in two invitations for EHV power equipment.

2. Mr. Conte: Please provide for the record a listing of TVA procurements undertaken or expected to be undertaken in fiscal year 1986 for EHV equipment as defined in the fiscal year 1986 Energy and Water Development Appropriations conference report.

Mr. Dean: The following TVA procurements have been undertaken or are expected to be undertaken in fiscal year 1986 for EHV equipment as defined in the fiscal year 1986 Energy and Water Development Appropriations conference report: power capacitors - $680,000; surge arresters - $300,000; fuses (2,300 volt and above) - $50,000; transformers (10,000 kVA and above) - $1,500,000; instrument transformers 500 kV - $450,000; insulators 500 kV - $375,000; relays - $640,000; tubular structures - $660,000; transmission line structure - $1,565,000; for a total of $6,220,000.

3. Mr. Conte: Please provide for the record an estimate of TVA procurements of EHV equipment anticipated over the next three years.

Mr. Dean: The following TVA procurements of EHV equipment are anticipated over the next three years.

For 1987: power capacitors - $500,000; surge arresters - $200,000; fuses (2,300 volt and above) - $10,000; transformers (10,000 kVA and above) - $1,000,000; power circuit breakers (345 kV and above) - $600,000; instrument transformers 500 kV - $100,000; insulators 500 kV - $250,000; relays - $930,000; tubular structures - $100,000; transmission line structure - $95,000; for a total of $3,785,000.

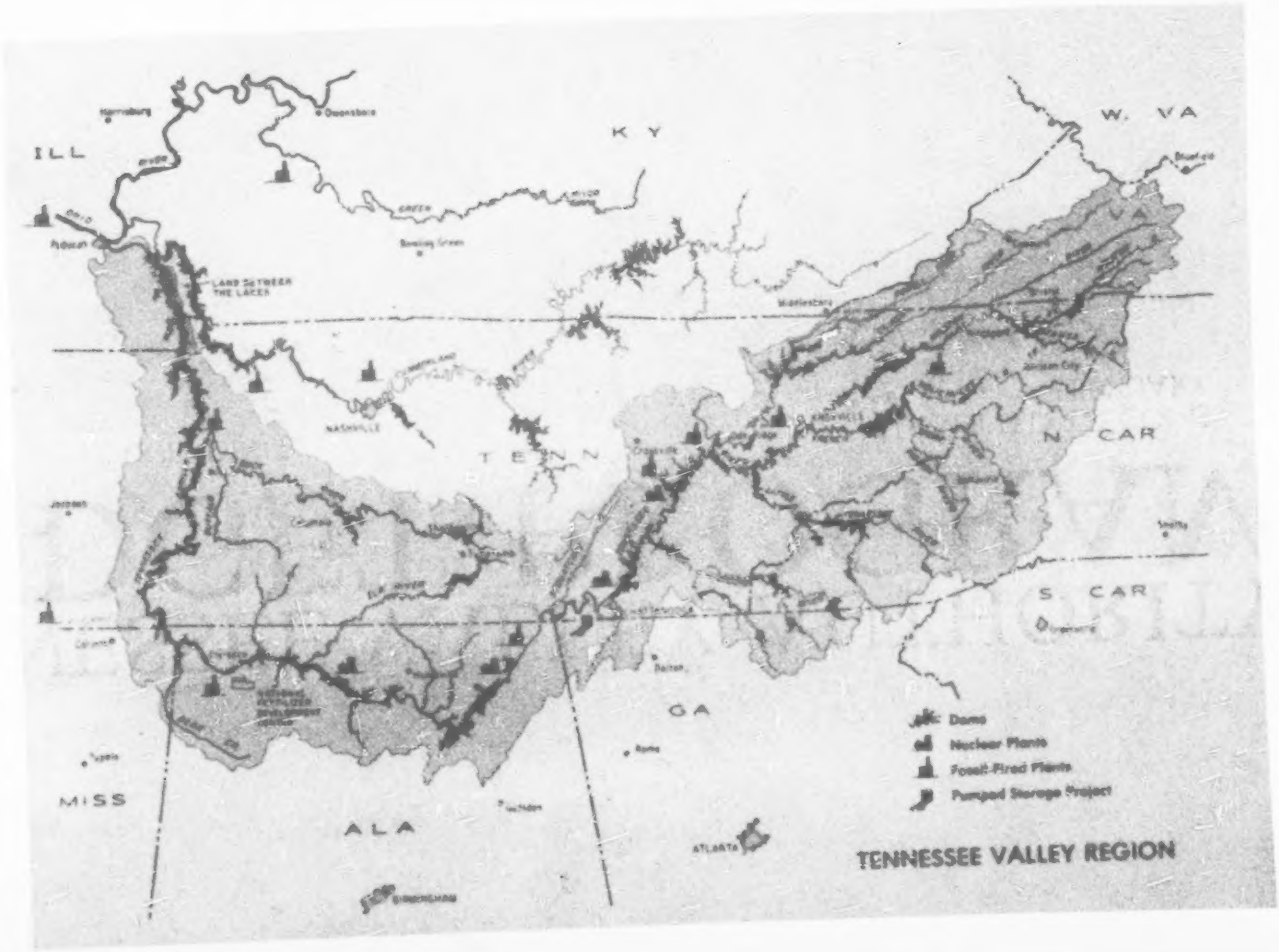
For 1988: power capacitors - $500,000, surge arresters - $250,000 fuses (2,300 volt and above) - $10,000; transformers (10,000 kVA and above) - $1,000,000; power circuit breakers (345 kV and above) - $600,000; instrument transformers 500 kV - $100,000; insulators 500 kV - $250,000; relays - $540,000; tubular structures - $100,000; transmission line structure - $650,000; for a total of $4,000,000.

For 1989: power capacitors - $500,000; surge arresters - $250,000; fuses (2,300 volt and above) - $10,000; transformers (10,000 kVA and above) - $1,000,000; power circuit breakers (345 kV and above) - $1,200,000; instrument transformers 500 kV - $100,000; insulators 500 kV - $500,000; relays - $670,000; tubular structures - $100,000; transmission line structure - $650,000; for a total of $4,980,000.

TENNESSEE VALLEY AUTHORITY
BUDGET PROGRAM

FOR THE FISCAL YEAR ENDING
SEPTEMBER 30, 1987

SUBMITTED TO CONGRESS
FEBRUARY 1986


ILL
K Y
W. VA
VA
TENN
N CAR
S CAR
GA
ALA
MISS
Harrisburg
Owensboro
Paducah
OHIO
RIVER
GREEN RIVER
Bowling Green
LAND BETWEEN THE LAKES
NASHVILLE
Middlesboro
KNOXVILLE
Johnson City
Bluefield
Jackson
Corinth
Tupelo
ELK RIVER
Dalton
Rome
ATLANTA
BIRMINGHAM
Dams
Nuclear Plants
Fossil-Fired Plants
Pumped Storage Project

TENNESSEE VALLEY REGION

CONTENTS

Page

Summary of Budget Financed from Appropriations 2
Summary of Budget Financed from Power Proceeds and Borrowings 5
Summary of Budget Financed from Nonpower Proceeds 8

NATURAL RESOURCES 11

Program Financing Schedule 12

WATER RESOURCES - CAPITAL INVESTMENT

Dam Safety Modifications 14
Additions and Improvements 15

WATER RESOURCES - EXPENSES 16
RESERVOIR SYSTEM OPERATIONS 17
LAND AND FOREST RESOURCES 19
RESOURCE MANAGEMENT AND DEVELOPMENT SUPPORT 20

NATIONAL FERTILIZER DEVELOPMENT 21

Program Financing Schedule 23

FERTILIZER RESEARCH 25
FERTILIZER TECHNOLOGY DEVELOPMENT 27
FERTILIZER TEST FACILITIES 28

Page

POWER SUPPLY AND USE 31

Figure 1, MONTHLY RESIDENTIAL AND INDUSTRIAL ELECTRIC BILLS 33

SOURCES AND DISPOSITION OF ENERGY 34
Sources and Disposition of Energy 36
Statement of Income 37
Summary of Revenue from Power Operations 39

OPERATING EXPENSES 40
Reconciliation of Income Statement with Budget Summary 45

STATEMENT OF RESOURCES PROVIDED AND APPLIED 46
Power Program Borrowings 47
Capital Investment 49
Reconciliation of Capital Expenditures with Budget Summary 54
Inventories, Deferred Charges, and Investment Funds 55
Payments to the Treasury 57

GENERAL SERVICES 59

Program Financing Schedule 60

The following is TVA's fiscal year 1987 request for appropriation financing of its area and regional development programs. The 1986 estimates reflect a 4.3-percent reduction as directed by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law No. 99-177).

Summary of Budget Financed from Appropriations

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
CAPITAL INVESTMENT			
New lock at Pickwick Landing Dam	6,291	709	-
Columbia Dam and Reservoir	1,347	863	-
Dam safety modifications	1,203	5,857	2,610
Additions and improvements	2,420	3,864	1,500
Water resources	177	-	-
Land and forest resources	219	240	-
Land Between The Lakes facilities	75	106	-
Economic resources	29	-	-
Fertilizer test facilities	7,668	5,191	4,400
Ammonia-from-coal facility	408	-	-
North Alabama coal-to-methanol project	2,134	1,935	-
General facilities	1,472	2,278	1,333
Total capital investment	23,443	21,043	9,843
OPERATING EXPENSES			
NATURAL RESOURCES			
Water resources	12,891	8,053	3,500
Reservoir system operations	20,858	22,771	20,593
Land and forest resources	4,934	4,130	550
Resource management and development support	4,407	4,970	2,250
Land Between The Lakes	7,308	6,712	-
Total natural resources	50,398	46,636	26,893

(Continued)

Summary of Budget Financed from Appropriations (Continued)

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
OPERATING EXPENSES (Continued)			
ECONOMIC RESOURCES			
Economic resources	17,446	14,896	-
Community resources	1,899	-	-
Total economic resources	19,345	14,896	-
AGRICULTURAL RESOURCES DEVELOPMENT	5,713	4,931	-
NATIONAL FERTILIZER DEVELOPMENT			
Fertilizer research	14,564	16,275	10,430
Technology introduction	12,934	12,085	10,205
Ammonia-from-coal process	6,435	200	-
Hardwood fuels research	4,037	3,265	-
Total national fertilizer development	37,970	31,825	20,635
GENERAL SERVICES	652	1,516	667
Total operating expenses	114,078	99,804	48,195
Jobs bill (P.L. No. 98-8)	-67	81	-
Total appropriations	137,454	120,928	58,038

(Continued)

Summary of Budget Financed from Appropriations (Continued)

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
FINANCING			
Appropriations	125,000	104,000	58,038
Unobligated balance brought forward	33,854	12,400	-
Deferred appropriation	-9,000	9,000	-
Unobligated balance carried forward	-12,400	-	-
Gramm-Rudman-Hollings reduction	-	-4,472	-
Total financing	137,454	120,928	58,038

Summary of Budget Financed from Power Proceeds and Borrowings

	In Millions of Dollars				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix*
CAPITAL INVESTMENT					
POWER SUPPLY AND USE					
Watts Bar Nuclear Plant units 1-2	547	438	257	310	257
Bellefonte Nuclear Plant units 1-2	465	383	400	400	400
Transmission system facilities	58	52	65	59	65
Acquisition of fuel reserves	-64	6	6	6	6
Additions and improvements at power facilities	441	441	493	479	493
Loans and other long-term receivables	-25	-1	-2	-2	-2
Nuclear fuel	-2	3	219	219	219
Total power supply and use	1,420	1,322	1,438	1,471	1,438
GENERAL SERVICES					
General facilities	23	30	35	35	35
Total capital investment	1,443	1,352	1,473	1,506	1,473
EXPENSES					
POWER SUPPLY AND USE					
Power operations	3,837	3,776	3,872	3,991	3,939
Allocation of multipurpose reservoir operations	8	9	9	9	9
Total expenses	3,845	3,785	3,881	4,000	3,948

*A single value was used in the Appendix to the Budget of the United States for fiscal year 1987. This value was used to accommodate the reporting format required by the Office of Management and Budget.

(Continued)

Summary of Budget Financed from Power Proceeds and Borrowings (Continued)

	In Millions of Dollars				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
INVESTMENT FUNDS					
Investment in bond retirement funds............	183	179	196	196	196
INVENTORIES AND DEFERRED ITEMS					
POWER SUPPLY AND USE					
Power inventories..............................	-129	-23	15	15	15
Nuclear plant decommissioning..................	-25	-27	-30	-30	-30
Unamortized investment in canceled nuclear plants..	-153	-196	-200	-200	-200
Other deferred charges.........................	-23	16	21	21	21
Total inventories and deferred items.....	-330	-230	-194	-194	-194
Total budget financed from power proceeds and borrowings................	5,141	5,086	5,356	5,508	5,423
FINANCING					
Balance brought forward........................	13,994	13,344	12,826	12,826	12,826
Current proceeds:					
Power operations.............................	4,579	4,655	4,894	4,974	4,961
Sale of retired plant........................	11	3	3	3	3
Miscellaneous receipts.......................	18	16	15	15	15
Total current proceeds..................	4,608	4,674	4,912	4,992	4,979

(Continued)

Summary of Budget Financed from Power Proceeds and Borrowings (Continued)

	In Millions of Dollars				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
FINANCING (Continued)					
Payments to the Treasury:					
Repayment of appropriation investment.........	-20	-20	-20	-20	-20
Return on appropriation investment............	-97	-86	-85	-85	-85
Total payments to the Treasury...........	-117	-106	-105	-105	-105
Balance carried forward........................	-13,344	-12,826	-12,277	-12,205	-12,277
Total financing..........................	5,141	5,086	5,356	5,508	5,423

Summary of Budget Financed from Nonpower Proceeds

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
EXPENSES			
NATURAL RESOURCES			
Water resources			
Reservoir system operations	810	625	625
Land Between The Lakes	1,078	1,200	-
AGRICULTURAL RESOURCES DEVELOPMENT	10	25	-
NATIONAL FERTILIZER DEVELOPMENT			
Fertilizer technology introduction	25,267	24,530	27,802
Joint ventures	-	715	1,200
GENERAL SERVICES			
Reimbursable services	37,702	88,006	95,104
Total expenses financed from nonpower proceeds	64,867	115,101	124,731
FINANCING			
Balance brought forward:			
Continuing fund	1,000	1,000	1,000
Other	5,818	2,697	2,382
Total balance brought forward	6,818	3,697	3,382

(Continued)

Summary of Budget Financed from Nonpower Proceeds (Continued)

FINANCING (Continued)	In Thousands of Dollars 1985 Actual	 1986 Estimate	 1987 Estimate
Current proceeds:			
Reservoir system operations	810	625	625
Land Between The Lakes	1,078	1,200	-
Agricultural resources development	14	25	-
National fertilizer development	18,173	20,630	23,941
Joint ventures	-	715	1,200
Reimbursable services	38,948	88,006	95,104
Sale of retired plant and miscellaneous receipts	2,814	3,685	3,685
Total current proceeds	61,837	114,886	124,555
Payments to the Treasury	-91	-100	-100
Balance carried forward:			
Continuing fund	-1,000	-1,000	-1,000
Other	-2,697	-2,382	-2,106
Total balance carried forward	-3,697	-3,382	-3,106
Total financing	64,867	115,101	124,731

NATURAL RESOURCES

Management and use of water-related resources encompass the objectives of TVA's programs in natural resources. Continued operation and maintenance of the TVA system of reservoirs will constitute the largest portion of this effort, providing flood control, navigation, and power production benefits. Today this responsibility calls for increasing sensitivity to maintenance of aging structures, to more stringent standards of dam safety, and to balancing competing needs in operational priorities.

Supporting this work are initiatives that seek to preserve the long-term benefits of TVA's investments by monitoring the water quality trends in both tributary streams and the reservoir system. TVA--working alone and in partnership with Valley States, other Federal agencies, and the private sector--will seek to improve surface water management, remedy existing problems, manage wetlands, research acid rain impacts, and demonstrate innovative alternatives to deal with widespread water quality problems. Other activities will include field inspections and environmental assessments of TVA's own programs affecting land and water use, and permitting requirements affecting navigation, flood control, and other uses of land under TVA authority.

TVA also serves a national role by producing topographic maps of the region as part of the U.S. Geological Survey's national mapping program.

NATURAL RESOURCES

Program Financing Schedule

APPROPRIATIONS	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Capital investment			
Water resources:			
New lock at Pickwick Landing Dam	6,291	709	-
Columbia Dam and Reservoir	1,347	863	-
Dam safety modifications	1,203	5,857	2,610
Additions and improvements	2,420	3 864	1,500
Water resources	177	-	-
Total water resources	11,438	11,293	4,110
Land and forest resources:			
Recreation resources development facilities	219	240	-
Land Between The Lakes	75	106	-
Total capital investment	11,438	11,639	4,110
Operating expenses			
Water resources	12,891	8,053	3,500
Reservoir system operations	20,858	22,771	20,593
Land and forest resources	4,934	4,130	550

(Continued)

NATURAL RESOURCES

Program Financing Schedule (Continued)

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
APPROPRIATIONS (Continued)			
Operating expenses (Continued)			
Resource management and development support	4,407	4,970	2,250
Land Between The Lakes	7,308	6,712	-
Total operating expenses	50,398	46,636	26,893
Total appropriations	62,130	58,275	31,003
OTHER PROCEEDS			
Power proceeds	8,424	13,009	10,107
Nonpower proceeds	1,888	1,825	625
Reimbursable services	-	-	2,000
Total program financing	72,442	73,109	43,735

WATER RESOURCES - CAPITAL INVESTMENT

Dam Safety Modifications

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Appropriations	1,203	5,857	2,610
Power proceeds	873	4,241	1,890
Reimbursable services (section 320 funds)	-	-	2,000
Total obligations	2,076	10,098	6,500

Program Description

TVA has developed a comprehensive program to ensure the safety of its dams for the protection and enhancement of the water resources system and the well-being of the people in the Tennessee Valley region. This program consists of (1) a systematic project-by-project inspection and reassessment of the dams, in light of modern-day dam design criteria and the Federal Guidelines for Dam Safety, (2) an ongoing inspection and maintenance program, (3) the preparation and maintenance of emergency action plans for all dams, and (4) appropriate capital modifications where safety improvements are indicated.

TVA has identified 21 dams which either do not or may not meet safety criteria for new dams consistent with the Federal Guidelines for Dam Safety. The projects are Blue Ridge, Fontana, Watauga, Chatuge, Fort Patrick Henry, Nottely, Fort Loudoun/Tellico, Boone, Guntersville, Beech, Douglas, Kentucky, Watts Bar, Chickamauga, Nickajack, Wheeler, Cherokee, Melton Hill, Pickwick Landing, Great Falls, and Ocoee No. 3. Detailed studies of Blue Ridge, Wheeler, Watauga, Boone, Fort Patrick Henry, Chatuge, Nottely, Cherokee, Great Falls, Fontana, Douglas, and Melton Hill have been completed and remedial measures have been or are currently being implemented, except for Melton Hill, which is planned for a later fiscal year. The dam safety modification program is an extension of the ongoing studies and analyses performed in the seven-year inspection and assessment schedule, and includes the detailed design and physical modification of these dams when necessary. Because modifications at one structure can affect downstream projects, these planned modifications must of necessity begin in the upstream reaches and proceed in an orderly project-by-project basis over the length of the system. The necessary modifications that result from these studies will continue for several years.

Project Status and Plans for 1987

The proposed level of funding provides for continuation of the design and construction of the modifications for the embankment, spillway walls, detour road and bridge, and existing road and bridge for Nottely Dam. Studies and inspection of Nottely have shown that spillway capacity and reservoir storage are not sufficient to pass the probable maximum flood without overtopping the embankment, which could result in a catastrophic failure.

This funding would also allow for the continuation of design and start of modifications to strengthen the upper portions of Fontana Dam. While studies and inspection of Fontana have shown that the dam and reservoir can pass the probable maximum flood, there is a risk of catastrophic failure due to a maximium credible earthquake.

Additions and Improvements

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Total appropriations........................	2,420	3,957	1,500
Power proceeds............................	242	596	649
Total obligations.....................	2,662	4,553	2,149

This category includes the replacement and maintenance of equipment needed for operating the multipurpose system of dams and reservoirs, and a continuing program of additions and improvements essential for the safe, efficient, and effective use of existing facilities.

The 1987 appropriation estimate of $1.5 million provides for turbine venting modifications at two dams, dam spillway gate painting equipment, visitor facilities on dam reservations, and miscellaneous maintenance facilities and equipment, including hardware, tractors, small boats, mowers, etc.

WATER RESOURCES - EXPENSES

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Appropriations:			
Capital investment......................	177	-	-
Operating expenses......................	12,891	8,053	3,500
Total appropriations...............	13,068	8,053	3,500
Power proceeds...........................	358	366	312
Total obligations.................	13,426	8,419	3,812

Regional water management emphasizes the quality of the reservoir water resources of the Valley. Water quality management plans will be implemented for Guntersville and Pickwick Reservoirs. Cooperative water quality improvement efforts with State and Federal agencies will continue, and a water resources data base will be maintained to ensure that pollution problems and water quality trends in TVA reservoirs and tributaries are identified and reported to the public.

Reservoir releases improvements activities will provide improved minimum flows at three tributary sites, and dissolved oxygen levels will be increased in releases at four other sites. A multiyear test will be initiated to improve dissolved oxygen levels below one dam by using pulsed discharges.

RESERVOIR SYSTEM OPERATIONS

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Appropriations	20,858	22,771	20,593
Power proceeds	6,951	7,806	7,256
Nonpower proceeds	810	625	625
Total obligations	28,619	31,202	28,474

The TVA system of 38 multipurpose dams, reservoirs, and associated lands is managed for all planned purposes, with emphasis on protection from flooding, provision of adequate depths in navigable channels, and production of hydroelectric power.

Navigation operations activities will include planning and maintenance of navigation additions and improvements to ensure safe operation of the waterway. The cost of power provided for lock operations is also included in this category.

Flood hazard analysis will maintain the computerized Flood Information Management System, and requests for existing flood hazard information will be handled.

Multipurpose reservoir operations include managerial responsibilities related to both primary and secondary benefits of the TVA integrated water control system.

Water control operations involves managing the storage and release of water through the multipurpose reservoir system. The reservoir resources reevaluation study will continue its analysis of operating guidelines in search of more effective utilization of the region's water resource.

Reservoir ecology activities will include mosquito control operations limited to areas with the most acute problems, and treatment will be applied to infestations of aquatic weeds to maintain control in the most critical reservoir areas. Hydrilla suppression treatments and other activities designed to reduce its further spread will be carried out. Studies preliminary to the use of the white amur for aquatic weed control will be extended.

Reservoir land planning will include completing the physical resource data base for one additional reservoir.

Dam reservation operation and maintenance includes the operation and routine maintenance of roads, grounds, recreation areas, and visitor and maintenance buildings on dam reservations, as well as maintenance of earthen portions of dams. The reservations adjacent to the 38 TVA multipurpose dams also contain 10 fee campgrounds. Proceeds derived from fee campgrounds and marinas are used by TVA in the operation of dams and reservoirs.

Reservoir land management will continue basic operation, maintenance, and protection of essential non-recreation facilities, and management of lands and landrights held by TVA on 11,000 miles of shoreline along its reservoirs, which is managed directly by TVA or through leases, easements, and other land use agreements. Proceeds derived from miscellaneous reservoir land operations, agricultural licenses on 18,000 acres, timber sales, leased or licensed boat docks, and commercial leases are retained by TVA for use in the operation of dams and reservoirs.

Plant protection and services to visitors includes providing protection from fire, theft, vandalism, sabotage, and disorderly conduct, as well as providing visitor information about TVA facilities and programs at 19 multipurpose facilities.

Dam safety analysis is an integral part of the overall TVA dam safety program and includes provisions for work undertaken in response to the Federal Guidelines for Dam Safety. A seven-year program begun in 1982 to complete detailed safety studies of dams will be continued. In addition, nonstructural activities will include investigating flood damage claims and resurveying reservoirs to determine sediment deposition.

Structure and equipment maintenance and improvement provides for short- and long-term maintenance of dams and associated facilities, measurement and assessment of structural and hydraulic data, and painting equipment and structures at multipurpose dams. Commitments for highway and railroad embankment protection will also be carried out, including maintaining the sod on earthfill embankments of relocated highways and railroads to control erosion.

LAND AND FOREST RESOURCES

	In Thousands of Dollars 1985 Actual	 1986 Estimate	 1987 Estimate
Appropriations:			
Capital investment......................	219	240	-
Operating expenses......................	[illegible],934	4,130	550
Total obligations..................	5,153	4,370	550

Critical wetlands will be regulated in 10 dewatering areas, totaling 15,000 acres, that adjoin the main reservoir system of the Tennessee River.

RESOURCE MANAGEMENT AND DEVELOPMENT SUPPORT

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Operating expenses:			
Total appropriations..................	4,407	4,970	2,250

Valley mapping and remote sensing activities provide maps and data collection technology, which are fundamental tools for developing the resources of the region. The program contributes to the U.S. Geological Survey's national mapping program through maintenance of the 775-sheet Valley topographic map series and development of a 71-sheet, 1:100,000-scale metric base map series.

Conservation of public lands and waters activities ensure that TVA actions comply with applicable Executive orders, State and Federal environmental statutes and regulations, and the TVA Act. These activities include the evaluation of land use proposals or applications for approval under Section 26a of the TVA Act of activities affecting navigation, flood control, and public land. Completed projects that affect navigation will be inspected to see that they conform to approved plans.

Acid rain activities, established and carried out under National Acid Rain Assessment Program (NAPAP) coordination, will include an intensive study of the decline of high-elevation red spruce, and the Whitetop Mountain monitoring station will be operated.

NATIONAL FERTILIZER RESEARCH

Fertilizer is at the heart of America's agricultural success. Scientists generally indicate that up to 40 percent of U.S. crop production is a direct result of the use of fertilizers. With fertilizers, farmers can meet the Nation's food and fiber needs and produce $30-$40 billion worth of agricultural exports annually. Without fertilizers, the Nation would be struggling to feed its own.

TVA's past impact on fertilizer technology and fertilizer use--in the U.S. and the world--is well documented. Its research has yielded a series of process and product innovations that has led to better and more economical fertilizer technology. And TVA has effectively promoted the sound use of improved fertilizers on the farm.

Future farmers will continue to benefit from these achievements. But they must not be restricted to history; advances must continue if new challenges are to be met and progress is to continue.

TVA has the Nation's only program dealing with a wide spectrum of fertilizer research. Basic research lays the foundation for additional scientific advances. Greenhouse research with products made in small amounts in laboratories suggest potential uses. Integrated research systems flow through bench-scale equipment and progress to larger research units. Field testing in cooperation with universities and the fertilizer industry confirms performance expectations and identifies crop, soil, and climatic conditions where a new technology best fits. Experimental products provide an opportunity to complete process testing and initiate commercialization. TVA staff works closely with university researchers and educators, members of the fertilizer industry, farmers, and others to update them on research progress, help integrate new technology into ongoing systems, and consider research needs and priorities.

The American farmer and the consumer are ultimate beneficiaries of TVA's research. In fact, most fertilizers made in the U.S. are derived from TVA technology. This technology has been one of the keys in America's increasingly efficient and productive agriculture. It has helped keep food in plentiful supply and reasonable in cost. The wise and prudent use of fertilizers is helping each farmer provide food and fiber for 80 people today, compared with 26 people in 1960.

The effectiveness of TVA's fertilizer program reflects its pragmatic orientation. The staff is an integrated, highly trained, multidisciplined team--chemists, engineers, soil scientists, economists, educators, and others. Commercialization of promising new technology is achieved by close cooperation with the industry.

The program recognizes that fertilizer is a strategic resource for attaining national food, fiber, and trade objectives. It also recognizes that the inherent nature of fertilizer-related technology and the variation in response to fertilizer use limit the potential for individual entities to recoup major R&D investments. Thus, the TVA program integrates a unified fertilizer R&D effort with national concerns. The National Fertilizer Development Center is the only public sector facility in the U.S. that combines agricultural and industrial research, is national in scope, and employs a Federal-State-private sector partnership for technology development and transfer.

The program for fiscal year 1987 will emphasize improvements in the efficiency of crop use of nutrients, especially nitrogen, the nutrient used in largest quantity and the most costly to produce. Even modest gains would represent major savings. The program also will stress development of new technologies for more effective use of indigenous raw materials. At the same time, the research program has been restructured. One objective is to cope more effectively with changing needs. Another feature of the 1987 research program will be increased reliance on smaller test facilities. Program changes also reflect responses to recommendations of the President's Private Sector Survey on Cost Control. Major emphasis is being given to identifying the kinds of services for which private industry would be willing to pay. Also, a concerted effort is being made to pursue final development of some technology in joint ventures with commercial interests.

NATIONAL FERTILIZER RESEARCH

Program Financing Schedule

	In Thousands of Dollars 1985 Actual	 1986 Estimate	 1987 Estimate
APPROPRIATIONS			
Operating expenses:			
Fertilizer research	14,564	16,275	10,430
Fertilizer technology development	12,934	12,085	10,205
Ammonia-from-coal process	6,435	200	-
Hardwood fuels research	4,037	3,265	-
Total operating expenses	37,970	31,825	20,635
Capital investment:			
Fertilizer test facilities	7,668	5,191	4,400
Ammonia-from-coal facilities	408	-	-
Total capital investment	8,076	5,191	4,400
Total appropriations	46,046	37,016	25,035
NONPOWER PROCEEDS			
Operating expenses:			
Fertilizer technology development	25,267	24,630	27,902

(Continued)

NATIONAL FERTILIZER RESEARCH

Program Financing Schedule (Continued)

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
REIMBURSABLE SERVICES*			
Operating expenses:			
Hardwood fuels research (DOE, AID)	2,273	2,190	2,190
Ammonia from coal (EPRI)	1,887	4,148	-
Other (DOD and IFDC)	1,334	993	1,039
Joint ventures (includes all income from private sources)	-	715	1,200
Total operating expenses	5,494	8,046	4,429
Total program financing	76,807	69,692	57,366

*Included in general services budget.

FERTILIZER RESEARCH

	In Thousands of Dollars 1985 Actual	 1986 Estimate	 1987 Estimate
Appropriations..........................	14,564	16,275	10,430

Program Description

TVA's research program at the National Fertilizer Development Center (NFDC) is being reoriented to focus on U.S. needs in the mid- to late 1990s. To accomplish program goals, new, more efficient methods must be researched to recover fertilizer raw materials from lower grade ore deposits to maintain the long-term viability of the U.S. industry. The processes for manufacturing both conventional and new fertilizer materials must be made more energy efficient in order to keep production economically viable. The finished fertilizer materials must be compatible with innovative farming systems which promote soil and water conservation, more efficient nutrient use by crops, and energy-conserving operations which combine fertilization, seeding, and herbicide application in one trip across the field. Research on more efficient use of plant nutrients in agriculture must be coupled with research to minimize the potential for nonpoint pollution--the two go hand in hand. New fluid fertilizers which prevent plugging of irrigation systems are needed before these practices become established in regions with poor water quality.

The NFDC is the only agency uniquely equipped to solve these national agenda items, with staff having comprehensive knowledge of the chemistry of soil-fertilizer processes, soil fertility, production agriculture, the fundamental chemistry of fertilizer raw materials and processes, and fertilizer technology.

The following activities are emphasized in fiscal year 1987:

Nutrient Efficiency Research. Emphasis will be on researching ways to increase nutrient efficiency by crops to reduce costs for American agriculture and the farmer. Inefficient use of nutrients costs farmers more than a billion dollars annually and also contributes to potential environmental problems.

Fertilizer Raw Material Research. Research will begin in order to ensure the viability of the U.S. phosphate industry as presently mined high-grade ores are depleted. Additional emphasis will be placed on studying potash as a raw material and fertilizer intermediate.

Basic Fluid Fertilizer Research. The major effort will be keyed to researching new, improved, and more concentrated clear liquid and suspension fertilizers that meet the current and future needs of U.S. agriculture. Emphasis will be on processes that are energy efficient, less polluting, and can be easily retrofitted into conventional industry plants.

Basic Granular Fertilizer Research. Research will be carried out on fertilizer processes that are energy efficient and less polluting and that can use lower quality raw materials and intermediates.

Fertilizer Evaluations Under Changing Agriculture Practices. Research will be directed toward developing and evaluating fertilizers, additives, and application techniques specifically designed for these widely divergent agricultural practices.

FERTILIZER TECHNOLOGY DEVELOPMENT

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
Appropriations...........................	12,934	12,085	10,205

Program Description

This program is a continuation and extension of fertilizer research. Experience and knowledge gained from field testing TVA experimental processes and products help scientists and engineers refine research at the center.

There are two major components in this program:

Process and product research and testing is conducted with industry firms in testing TVA's experimental manufacturing processes at the test facility stage. Where appropriate and possible, joint financing is undertaken with innovative industry firms that can play a role in this effort. Major emphasis is on completing research on more efficient and environmentally safe manufacturing processes. Product research is conducted to test the agronomic and engineering benefits of TVA experimental fertilizer products. Feedback from university evaluation of an experimental product helps determine its effectiveness under a wide range of management, soil, climatic, and environmental conditions. Needed adjustments in product development are identified. Feedback from industry use of an experimental product helps TVA scientists make needed modifications and to complete the engineering development of the product. Commercialization of the product determines its potential acceptance. The ultimate goal is to develop improved products for use by American farmers in producing a cheaper, high-quality food and fiber for consumers.

Production of experimental fertilizers is conducted in cooperation with industry firms to create and evaluate market acceptance of newly developed, improved fertilizer products. Once TVA's product research and testing of an experimental product has been completed, needed tonnages are produced to stimulate widescale industry adoption. During this stage in the program, it is frequently determined that process modifications are needed. This step reduces the risk for many small firms in adopting the process, both from a production and marketing aspect. This also supports conditions for a highly competitive industry, hence a lower cost product.

FERTILIZER TEST FACILITIES

	In Thousands of Dollars 1985 Actual	 1986 Estimate	 1987 Estimate
Appropriations..........................	7,668	5,191	4,400

Program Description

The long-range goal of this program is to provide support to the overall national fertilizer program through design and construction of test facilities and general facilities. These facilities allow TVA to link research to commercialization of new fertilizer products and processes and new agricultural practices which use these fertilizers. The test facilities program is needed for improving the efficiency and economics of operation of existing facilities, constructing new test and support facilities, providing environmental improvements, and making design studies for meeting future needs.

There remains a viable need for TVA to construct and operate fertilizer test facilities to (1) avoid the risks involved in design scale-up from research size to industry size, (2) optimize technology, and (3) produce sufficient quantities of new experimental fertilizers for completing agricultural research testing. These test facilities provide the mechanism for researchers to make necessary changes in products or their manufacturing processes which can result in enhancing their economic feasibility in the national fertilizer market.

The test facilities are continuously monitored and evaluated for modifications to reduce energy consumption, improve efficiency, reduce operating labor, improve product quality, and reduce adverse environmental effects. All of these improvements enhance the viability of the process and promote industry adoption. Feedback from TVA's field chemical engineering staff is a source of new projects. Occasionally, test facilities are modified on the basis of information from commercial firms as they test TVA's new products.

Facilities projects proposed for fiscal year 1987 are:

Research Facilities

- Modifications to nitric acid plant--Long-term delivery of equipment will result in this project continuing to completion in fiscal year 1987.

- Fertilizer granulation test facility--Engineering and procurement activities will continue and construction will begin for the new fertilizer granulation test facility that is needed for the developmental study of various granulation processes. Major emphasis for fiscal year 1987 funding is in the construction phase of the project. The facility is estimated to cost $2.9 million and completion is scheduled in September 1987.

- Raw material test facility--An ore beneficiation test facility will be constructed to allow larger scale technical and economic evaluations of processes developed in laboratory and bench-scale research. Evaluations are presently being made for feasibility of constructing this facility as a mobile unit to allow it to be transported to U.S. phosphate mining areas for testing TVA-developed flotation reagents and process configurations on various phosphate ores. The estimated cost of the facility is $500,000, with completion in the fourth quarter of fiscal year 1987.

Support Facilities

- Equipment modifications and replacements--This activity includes a car puller installation to facilitate car spotting for raw materials unloading and product loading; double deck screening in the solids fertilizer shipping lines; automatic samplers for solid products as they are loaded out; purchase of used closed hopper cars for hauling bulk solid fertilizers to barge loading facilities; preliminary design studies for future construction projects; and other needed minor replacements and improvements throughout the OACD complex.

- Environmental control and assessment projects--These projects include several water pollution control projects, such as the rehabilitation of treated water storage at the water filtration plant, and upgrading and installing containment dikes and monitoring instruments in various areas of the chemical plant.

POWER SUPPLY AND USE

TVA supplies electricity to municipal and cooperative distributors which serve more than seven million residential, commercial, and industrial customers in parts of seven States. In addition, TVA directly serves 47 large industrial customers and 11 Federal installations.

Nuclear Concerns

TVA is currently involved in a massive effort to address and resolve a number of safety concerns in its nuclear program. As a result of these concerns, TVA voluntarily shut down its Browns Ferry Nuclear Plant in March 1985 and its Sequoyah Nuclear Plant in August 1985. Action regarding licensing of the Watts Bar Nuclear Plant is also on hold pending resolution of these concerns. TVA is unable to provide an accurate estimate as to when these units will be returned to service due to the uncertainties involved in ensuring that the units can be safely operated. Additional information concerning the status of the nuclear program will be provided during our testimony.

During the period that these units are not available for service, TVA will continue to supply adequate electric power at reasonable rates from its fossil and hydro systems, augmented as necessary with purchases from other utilities. TVA does not believe that its customers will experience power supply disruptions as a result of these actions, which were taken in response to its paramount concern for nuclear safety.

Coal as Energy

TVA's existing coal-fired plants, with appropriate maintenance and continued emphasis on life extension and improvement programs, will continue to be reliable sources of power supply for many years. TVA's coal-fired units, though aging, are in aggregate among the most efficient in the United States in terms of thermal efficiency (heat rate).

TVA is continually implementing management effectiveness programs designed to keep its coal-fired plant operating costs at the lowest level possible in order to provide a reliable supply of power at the lowest feasible rates, with a sensitivity to the environment.

Future Options

With the completion of the Bellefonte Nuclear Plant, TVA's generating capacity should adequately support through the 1990s the economic growth expected under the medium and low load forecasts. For the high load forecast, additional peaking and baseload capacity beyond Bellefonte may be needed in 1997.

TVA has several power supply options which today appear less costly than construction of new conventional central generating stations. Conservation has been and continues to be TVA's prime alternative to construction of new capacity. Conservation programs in the TVA region show potential for reducing electricity consumption by 11.6 billion kilowatthours by the year 2005.

Research and Development

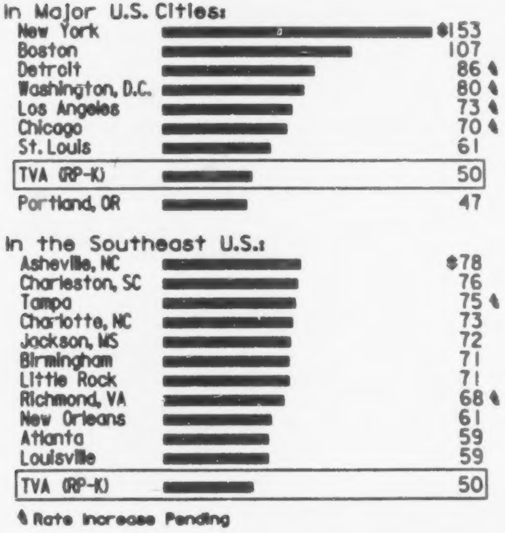
Improvements and innovations made as a result of TVA's research and development program are another avenue for avoiding high-cost conventional generating stations. In addition to numerous projects designed to improve conservation, solar, load management, and existing power generation technologies, TVA is preparing, in cooperation with other parties, to build and test a demonstration-scale fluidized-bed combustion plant which shows promise of being less expensive than conventional coal-fired generating stations with scrubbers.

Power Rates

Rate stability was maintained during fiscal years 1982 through 1985, a period of four years when the general inflation rate totaled 17.7 percent. The rates for fiscal year 1986 increased 3.7 percent over fiscal year 1985 rates. This increase, coupled with the conclusion of a 3.2 percent power credit (which was used to return to consumers $150 million collected in 1984), will increase customer bills during 1986 by about 6.9 percent over 1985. This is equivalent to a $3.24 increase in a $47.00 electric bill. For 1987, additional revenue will probably be needed. While at this juncture the amount is uncertain, it is expected to be in the single-digit range.

The following bar charts illustrate how favorably both residential and industrial rates compare with the rest of the Nation. While actual electric rates of other systems may vary significantly from month to month due to the application of fuel adjustments, seasonal rates, etc., these charts illustrate the charges determined under the rate schedules in effect for October 1985 in a sampling of major United States cities. The charts assume a typical usage as a residential customer load of 1,000 kilowatthours and a moderately sized industrial load of 1,000 kilowatts demand and 400,000 kilowatthours.

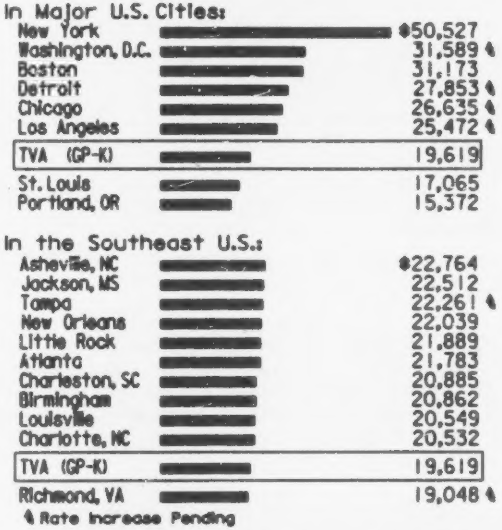
MONTHLY RESIDENTIAL ELECTRIC BILLS
1,000 Kilowatthours
October 1985



NOTE: Bills for others are based on applicable residential rate information obtained directly from the utilities. Bills include all currently applicable adjustments and charges except local and state sales taxes. TVA rate level RP-K is typical of basic residential bills in TVA service area; amount may vary in particular locations due to rate level difference and application of special charges.

1,000 KWh is a utility comparison standard nearest to the average use in the Tennessee Valley. At higher or lower use levels, TVA rates may compare more or less favorably.

MONTHLY INDUSTRIAL ELECTRIC BILLS
1,000 KW Demand-
400,000 KWh Monthly Consumption
October 1985



NOTE: Bills for others are based on applicable industrial rate information obtained directly from the utilities. Bills include all currently applicable adjustments and charges except local and state sales taxes. TVA rate level GP-K is typical of basic industrial bills in TVA service area; amount may vary in particular locations due to rate level difference and application of special charges.

This usage level is a utility comparison standard. At higher or lower use levels TVA rates may compare more or less favorably.

SOURCES AND DISPOSITION OF ENERGY

The TVA power supply is obtained from hydroelectric, coal-fired, combustion turbine, and nuclear generation, supplemented by interchange and purchase agreements with neighboring utilities. The table on page 36 shows the sources and disposition of electrical energy for fiscal years 1985 through 1987. Due to the uncertainty of the availability of nuclear generation in fiscal years 1986 and 1987, no specific generation mix is provided for those years.

Sources of Energy

TVA operates and maintains its own hydroelectric generating plants, and in addition acquires hydroelectric energy from Cumberland River facilities (marketed by the Southeastern Power Administration) and facilities owned by Tapoco, Inc., a subsidiary of the Aluminum Company of America. Estimates for hydroelectric generation vary, depending primarily upon weather conditions. The lower number of the estimated range of revenue requirements reflects the assumption of a dry year, the higher number a wet year. Total hydro estimates for fiscal year 1987 are estimated to range from 24.2 billion kilowatthours to 14.7 billion kilowatthours. Normal hydro conditions are estimated to provide about 19.4 billion kilowatthours. These estimates include about 1.2 billion kilowatthours from the Raccoon Mountain Pumped-Storage Plant. The plant is used to provide peaking capacity and to increase the reserve capacity of the TVA system.

Due to uncertainty surrounding the schedules for restart of TVA's nuclear generating units, the sources of generation are not shown.

Disposition of Energy

The estimated rate of growth in economic activity from 1985 to 1987 ranges from a high of 5.1 percent per year to a low of 1.1 percent per year. Sales are estimated to range from 108.5 billion to 97.4 billion kilowatthours, compared with 103.5 billion kilowatthours for fiscal year 1985 and an estimate of 101.5 billion kilowatthours for fiscal year 1986. The high-range estimate for 1987 assumes high growth in the Tennessee Valley region's manufacturing economy and a large increase in sales to municipalities and cooperatives. The low-range estimate assumes a slump in the Tennessee Valley region's manufacturing economy and a significant decrease in sales to municipalities and cooperatives.

In addition to sales, disposition of energy includes exchanges with adjacent systems, deliveries under an exchange agreement with Tapoco, Inc., TVA's internal requirements, and pumping for the Raccoon Mountain Pumped-Storage Plant.

Sources and Disposition of Energy

	Billion kWh				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Sources					
Hydroelectric generation	15.0				
Coal-fired	73.8				
Nuclear	17.7				
Combustion turbine generation	-				
Total generation	106.5				
Receipts from other utilities	3.9				
Total sources	110.4	108.6*	116.5*	104.8*	110.7*
Disposition					
Sales:					
Municipalities and cooperatives	82.1	83.3	86.5	81.3	84.2
Other electric systems	0.4	0.3	0.3	0.3	0.3
Directly served industries	15.4	15.4	19.2	13.3	15.9
Federal agencies	5.2	2.1	2.0	2.0	2.0
Interdivisional	0.4	0.4	0.5	0.5	0.5
Total sales	103.5	101.5	108.5	97.4	102.9
Delivered to other systems	0.6	1.1	1.8	1.8	1.8
Deliveries to Tapoco, Inc.--exchange	1.6	1.6	1.6	1.6	1.6
Transmission losses	2.9	2.9	3.1	2.5	2.9
Pumping requirements	1.8	1.5	1.5	1.5	1.5
Total disposition	110.4	108.6	116.5	104.8	110.7

*A breakdown of the sources for fiscal years 1986 and 1987 is not provided due to the uncertainty of the level of nuclear generation.

Statement of Income*

The following is a statement of income for the power operations program. Net income for fiscal year 1987 is estimated to range from $621 million to $602 million, up at least $70 million from the estimate for 1986.

---

*See page 45 for the reconciliation of the income statement with the budget summary.

		In Millions				
				1987 Estimate		
	Refer to Page	1985 Actual	1986 Estimate	From	To	Budget Appendix
Revenue	39	$4,547	$4,645	$4,867	$4,947	$4,934
Operating expenses:						
Production expense before depreciation	41	1,985	1,873	1,818	1,971	1,875
Transmission expense		43	45	44	45	44
Power research, development, and demonstrations	43	70	77	85	78	81
Power administrative and other expenses	44	228	274	290	297	297
Payments in lieu of taxes	44	188	196	204	204	204
Provision for depreciation and nuclear plant writeoff		288	329	529	436	529
Total operating expenses		2,802	2,794	2,970	3,031	3,030
Operating income		1,745	1,851	1,897	1,916	1,904
Other income and deductions:						
Amortization of canceled nuclear plants		181	210	72	145	72
Other, net		105	-29	-18	-18	-18
Total other income and deductions		286	181	54	127	54
Income before interest charges		1,459	1,669	1,843	1,789	1,850
Interest charges:						
Interest on debt		1,611	1,633	1,724	1,742	1,731
Less: AFUDC		-578	-546	-502	-555	-502
Net interest charges		1,033	1,137	1,222	1,187	1,229
Net income		426	532	621	602	621

Summary of Revenue from Power Operations

The TVA Act requires that TVA power rates be sufficient to produce gross revenues adequate to cover the cost of operation, maintenance, and administration of its power system; payments to States and counties in lieu of taxes; specified fixed charges associated with debt financing; U.S. Treasury payments; and a margin, determined by the TVA Board, for investment in power system assets, reduction of liabilities, and other purposes connected with TVA's power business.

Estimates of the range of power revenues are summarized in the following table.

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Municipalities and cooperatives	$3,272	$3,409	$3,541	$3,328	$3,446
Federal agencies	566	517	516	516	516
Commercial and industrial	629	634	783	542	649
Electric utilities	16	12	14	14	14
Total outside sales	4,483	4,572	4,854	4,400	4,625
Interdivisional	16	19	19	19	19
Total sales at 1986 rates	4,499	4,591	4,873	4,419	4,644
Additional revenue required	-	-	-67	467	229
Rent from electric property and other revenues	48	54	61	61	61
Total power revenues	4,547	4,645	4,867	4,947	4,934

OPERATING EXPENSES

Operating expenses include power production, transmission, power research and development, payments in lieu of taxes, and administrative expenses. About two-thirds of the power production expense is for fuel--primarily coal.

The estimated range of TVA's expenses for power operations varies from $2.970 billion to $3.031 billion. These estimates are higher than the $2.794 billion estimate for fiscal year 1986, primarily reflecting increases in depreciation, writeoff costs for nuclear plants, and payments in lieu of taxes.

Summary of Production Expenses Before Depreciation

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Hydroelectric:					
TVA hydro and pumped-storage	$23	$21	$27	$23	$24
Cumberland	15	16	16	16	16
Total hydroelectric	38	37	43	39	40
Steam-electric and combustion turbine:					
Coal-fired fuel expenses	1,271				
Nuclear fuel expenses	153				
Combustion turbine fuel expenses	3				
Subtotal	1,427				
Labor and materials	421				
Total steam-electric and combustion turbine	1,848	1,826*	1,731*	1,886*	1,791*
Interchange and other:					
Receipts	87	43	80	82	80
Deliveries	-15	-43	-46	-46	-46
Net	72	-	34	36	34
Production support expenses:					
System control and other expense	20	1	1	1	1
Allocation of multipurpose reservoir operations	7	9	9	9	9
Total production support expenses	27	10	10	10	10
Total production expenses before depreciation	1,985	1,873	1,818	1,971	1,875

*A breakdown of steam-electric production expenses for fiscal years 1986 and 1987 is not provided due to the uncertainty of the level of nuclear generation.

Hydroelectric production expense for fiscal year 1987 is estimated to range from $43 million to $39 million. This includes an estimated payment of $16 million to the Southeastern Power Administration for Cumberland power and an estimated range of $27 million to $23 million for other hydroelectric operation and maintenance activities.

Combustion-turbine generation is expected to be minimal during fiscal years 1986 and 1987. Combustion-turbine generation will be used only for peaking, and for meeting load demand only when lower cost sources are not available.

Interchange receipts and deliveries from other systems are used to meet system load requirements when TVA generating capacity is inadequate or when power can be purchased more cheaply than when it is generated on the TVA system. On the other hand, when TVA generating capacity is more than adequate for load requirements, power is delivered to other power systems as requested under exchange arrangements. Receipts for fiscal year 1987 are estimated to range between $80 million and $82 million, with deliveries estimated to be about $46 million.

Production support expenses includes load scheduling, communications, and other support activities necessary for the operation and maintenance of production plants. It also includes an allocation of the cost of operating and maintaining multipurpose hydro facilities.

Power Research, Development, and Demonstration

In Millions

	1985 Actual	1986 Estimate	1987 Estimate		
			From	To	Budget Appendix
Atmospheric fluidized-bed combustion	$9	$11	$11	$11	$11
Conservation and renewable resources	4	4	5	4	5
Other RD&D projects	16	17	23	19	20
Contributions to EPRI and other research organizations	23	24	26	24	25
Demonstration of power use	18	23	24	24	24
Total RD&D expenses	70	79	89	82	85

TVA's research, development, and demonstration programs are designed to develop and evaluate new processes, technologies, and applications to address specific system needs and provide options for the retrofitting, modification, and future system expansion necessary to ensure the required capacity generation at the lowest cost. The primary near-term objective is to increase the efficiency and decrease the cost of generating and distributing power while meeting environmental requirements. The long-term objective is to assist TVA in maintaining the flexibility to meet future generating requirements at the lowest feasible cost to the customer through maximum cost-effective use of conservation and energy management, dispersed and renewable technologies, and advanced central station technologies.

TVA is engaged with Duke Power Company, Combustion Engineering, the Electric Power Research Institute, the State of Kentucky, and the Atmospheric Fluidized-Bed Development Corporation in the design, construction, and testing of a demonstration-scale atmospheric fluidized-bed combustor at TVA's Shawnee Steam Plant. Congress has also appropriated some funds to DOE for this project. Because the fluidized-bed combustion technology allows the use of lower grade coals without flue gas desulfurization, it shows promise of being less expensive than new conventional coal-fired generating stations with scrubbers.

Conceptual design of the demonstration unit is complete, and the detail engineering is underway. The current estimated cost for the design, construction, and testing of the 160-MW unit is $205 million. Thus far, $236 million has been pledged. The principals are negotiating with other parties to raise additional funds to cover potential overruns, if they occur.

Conservation, load management, and renewable resource projects are designed to reduce future electricity needs and the resulting requirements for capacity additions. Much of the research is on end-use technologies for residential or industrial applications. Programs include solar and wood heating demonstrations; development of more efficient heat pumps, motors, and other equipment; and other programs, such as electric vehicles and the development of load management technologies.

Power administrative and other expenses include the cost of administrative, supervision, marketing, and general support to management in planning, coordinating, and directing the overall TVA power program.

TVA makes payments in lieu of taxes to States and counties as required by the TVA Act. Such payments are based on 5 percent of gross proceeds derived from the sale of electricity, exclusive of deliveries to Federal agencies and for TVA's own use. Computations are based on gross proceeds for the preceding fiscal year. The following schedule shows by State the estimated 1985 in-lieu-of-tax payments as well as the payments to replace former ad valorem taxes on power properties purchased by TVA.

State	Minimum Payments to Replace Ad Valorem Taxes on Purchased Power Properties (In Millions)	Fiscal Year 1985 In-Lieu-of-Tax Payment (In Millions)
Alabama	$0.062	$41.660
Georgia	0.064	2.140
Illinois	0.056	0.298
Kentucky	0.056	12.427
Mississippi	0.047	12.869
North Carolina	0.008	0.685
South Dakota	0.035	0.035
Tennessee	1.075	117.713
Virginia	0.001	0.420
Total	1.404	188.247

Reconciliation of Income Statement with Budget Summary

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
REVENUE FROM POWER OPERATIONS					
Per income statement (page 38)	$4,547	$4,645	$4,867	$4,947	$4,934
Reconciling items:					
Interchange power delivered	15	30	46	46	46
Interdivisional sales	17	-20	-19	-19	-19
Per budget summary (page 5)	4,579	4,655	4,894	4,974	4,961
EXPENSES					
Per income statement (page 38):					
Operating expenses	2,802	2,794	2,970	3,031	3,030
Other income and deductions	319	181	54	127	54
Net interest expense	1,033	1,137	1,222	1,187	1,229
Total	4,154	4,112	4,246	4,345	4,313
Reconciling items:					
Undelivered orders	-21	-8	-8	-8	-8
Depreciation	-288	-329	-384	-364	-384
Interchange power delivered	15	30	46	46	46
Interdivisional sales	-16	-20	-19	-19	-19
Per budget summary (page 5)	3,844	3,785	3,881	4,000	3,948

STATEMENT OF RESOURCES PROVIDED AND APPLIED

The following table displays the changes in power program assets, liabilities, and equity items. This statement reflects the financial resources provided from various sources, such as borrowings and operations (after operating expenses are met), and the utilization of these resources for such items as capital investment, etc.

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Resources provided					
Net income	$426	$532	$621	$602	$621
Add items not requiring funds	20	20	165	92	165
Funds from power operations	446	552	786	694	786
Sale of power assets (principally nuclear fuel)	121	168	193	193	193
Funds from power program	567	720	979	887	979
Other sources	63	10	10	10	10
Borrowings	896	250	532	573	532
Total source of funds	1,526	980	1,521	1,470	1,521
Resources applied					
Capital investment expenditures*	935	976	1,153	1,133	1,153
Capital lease assets	80	-	-	-	-
Payments to the U.S. Treasury	117	106	105	105	105
Investment funds	155	152	155	155	155
Changes in other assets and liabilities	131	53	126	126	126
Changes in inventory	-129	-23	15	15	15
Changes in working capital other than inventory	237	-284	-33	-64	-33
Total disposition of funds	1,526	980	1,521	1,470	1,521

*See page 54 for reconciliation of capital investment expenditures with the budget summary.

Power Program Borrowings

Section 15d of the TVA Act authorizes TVA to issue bonds, notes, and other evidences of indebtedness to assist in financing its power program. The maximum amount of such obligations authorized to be outstanding at any one time is $30 billion. At the end of fiscal year 1985 this indebtedness is $16.3 billion, and is estimated to increase to about $16.5 billion and $17.1 billion by the end of fiscal years 1986 and 1987 respectively.

1202

Statement of Changes in Indebtedness

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Borrowings outstanding at beginning of fiscal year					
Long-term debt:					
Payable to public	$1,725	$1,725	$1,625	$1,625	$1,625
Payable to Federal Financing Bank	12,800	13,900	14,350	14,350	14,350
Short-term debt:					
Payable to U.S. Treasury	150	150	150	150	150
Payable to Federal Financing Bank	685	481	381	381	381
Total	15,360	16,256	16,506	16,506	16,506
Changes in borrowings during fiscal year					
Long-term debt:					
Payable to public	-	-100	-45	-45	-45
Payable to Federal Financing Bank--issues	1,100	450	1,077	1,118	1,077
--redemptions	-	-	-500	-500	-500
Short-term debt:					
Payable to Federal Financing Bank	-204	-100	-	-	-
Total	896	250	532	573	532
Borrowing outstanding at end of fiscal year					
Long-term debt:					
Payable to public*	1,725	1,625	1,580	1,580	1,580
Payable to Federal Financing Bank	13,900	14,350	14,927	14,968	14,927
Short-term debt:					
Payable to U.S. Treasury	150	150	150	150	150
Payable to Federal Financing Bank	481	381	381	381	381
Total	16,256	16,506	17,038	17,079	17,038

*Includes amounts payable to the public within one year.

Capital Investment

Power capital investment for fiscal year 1987 is expected to be within a range of $1.656 billion to $1.689 billion, compared with $1.520 billion in fiscal year 1986. The following table shows the estimated system capacity and net generation by type for fiscal years 1986 and 1987.

	Nameplate Capacity - kW		Net Generation - kWh (Million)		
	September 30, 1986	September 30, 1987	1986 Estimate	1987 Estimate From	1987 Estimate To
Hydro...............................	6,030,850	6,030,850			
Coal................................	17,647,360	17,647,360			
Nuclear.............................	7,167,060	8,436,960			
Combustion turbine..................	2,510,000	2,510,000			
Total..........................	33,355,270	34,625,170	107,300*	113,700*	101,700*

*A breakdown of the sources of generation for fiscal years 1986 and 1987 is not provided due to the uncertainty of the level of nuclear generation.

Capital Investment

	Refer to Page	In Millions 1985 Actual	1986 Estimate	1987 Estimate From	To	Budget Appendix
Generating capacity additions:						
Watts Bar Nuclear Plant	51	$555	$442	$261	$314	$261
Bellefonte Nuclear Plant	52	473	399	403	403	403
Subtotal		1,028	841	664	717	664
Additions and improvements at power facilities		413	441	493	479	493
Transmission system facilities		59	52	65	59	65
Acquisition of fuel reserves		-64	6	6	6	6
Loans and other long-term receivables		-24	-1	-2	-2	-2
General facilities		22	30	35	35	35
Nuclear fuel		108	152	394	394	394
Subtotal		1,542	1,521	1,655	1,688	1,655
Less: AFUDC		-578	-546	-502	-555	-502
Other capital investment changes		-29	1	-	-	-
Total capital investment		935	976	1,153	1,133	1,153

Watts Bar Nuclear Plant - Units 1-2

In Millions								
Prior Years	1985 Actual	1986 Estimate	1987 Estimate		To Complete		Estimated Cost	
			From	To	From	To	From	To
$2,903	$555	$452	$261	$314	$28	$150	$4,200	$4,375

Project Description. The Watts Bar plant consists of two nuclear-fueled generating units with a total rating of 2,539,800 kW. The site is located on Chickamauga Reservoir just downstream from Watts Bar Dam, approximately eight miles southeast of Spring City, Tennessee.

Project Status and Plans for 1987. Preliminary construction at the site began in December 1972. The construction permit was issued January 23, 1973. There have been certain safety issues raised by construction employees and other TVA employees that are currently being examined, and their resolution may delay issuance by the Nuclear Regulatory Commission (NRC) of the operating license for unit 1. Expenditures in fiscal year 1987 are estimated to range from $262 million to $315 million.

Cost Estimate. The estimated cost ranges from $4.200 billion to $4.375 billion, an increase of up to $555 million over that reported in last year's report.

Bellefonte Nuclear Plant - Units 1-2

In Millions					
Prior Years	1985 Actual	1986 Estimate	1987 Estimate	Estimate To Complete	Total Estimated Cost
$2,947	$473	$389	$403	$4,288	$8,500

Project Description. The Bellefonte plant consists of two nuclear-fueled generating units with a total rating of 2,664,800 kW. The site is on Guntersville Reservoir about seven miles northeast of Scottsboro, Alabama.

Project Status and Plans for 1987. In the Budget Program for fiscal year 1986 the commercial operation for the first and second units was scheduled for April 1988 and April 1990, respectively, with possible delay of one year for each unit. The recent load forecasts for the TVA power system indicates that additional generating capacity following Watts Bar Nuclear Plant unit 2 will be needed somewhat later than was previously estimated. Therefore, pending further study, TVA has chosen a most prudent and least cost action for minimizing the cost of completing Bellefonte Nuclear Plant units 1 and 2, and to establish a program that would bring these units into service when needed. Cost estimates for fiscal years 1986 and 1987 will provide for continuing design and construction effort on critical plant features at a reduced staffing level.

Cost Estimate. Based on the current load forecast for the TVA power system, the need for additional generating capacity supports a scheduled commercial operation date of January 1994 and January 1996 for Bellefonte unit 1 and unit 2 respectively. Based on these dates, the total project cost is estimated to be approximately $8.5 billion.

Other Capital Expenditures

Additions and improvements at generating plants: Included are funds to provide for modifications necessary to improve the overall power system's operation, as well as improve internal operation and maintenance. Funding also provides for replacement of deteriorated generator stator windings at various hydroelectric generation plants; replacement of worn or inefficient coal-handling equipment; improvements to ash disposal facilities and environmental control facilities; replacement of inferior spindle and turbine parts and various boiler components and tubes; and safety, environmental, and reliability modifications at various coal-fired and nuclear plants.

Transmission system facilities: Various improvements are also needed for the extensive network of transmission facilities, including extra-high-voltage as well as lower voltage facilities, which TVA uses to supply electric energy to distributors and other customers. Through a seven-State communication network, the Power System Control Center near Chattanooga, Tennessee, constantly adjusts generation at the interconnected units to meet varying load demands on the most economical basis. In addition, the transmission facilities are used in balancing the system load by exporting or importing power to meet temporary energy surpluses or shortages and to accommodate power flow among interconnected power systems.

Acquisition of fuel reserves: TVA has secured fuel reserves to help ensure a reliable and economic fuel supply for its coal-fired and nuclear plants over their expected economic lives. Funds are spent for assessing system needs, the evaluation of reserve exploration and purchase proposals, title work on specific properties, actual reserve purchases, and periodic reserve inventories.

Reconciliation of Capital Expenditures with Budget Summary

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Capital investment expenditures per statement of resources provided and applied (page 46).......	$935	$976	$1,153	$1,133	$1,153
Reconciling items:					
Sale of nuclear fuel..............................	-110	-149	-175	-175	-175
Allowance for funds used.....................	578	546	502	555	502
Other..	28	-1	-	-	-
Subtotal capital expenditures...............	1,431	1,372	1,480	1,513	1,480
Change in undelivered orders........................	12	-20	-7	-7	-7
Total capital investment per budget summary (page 5)...........................	1,443	1,352	1,473	1,506	1,473

Inventories, Deferred Charges, and Investment Funds

TVA maintains inventories of fuels, spare parts, and other supplies for use on an as-needed basis. TVA also defers some charges to the future periods when the products or services purchased are actually used by the power system. These deferred charges are made in accordance with generally accepted accounting principles. In addition, TVA has established investment funds to retire bonded indebtedness associated with the canceled nuclear units and to fund decommissioning of the active nuclear units at the end of their operating lives.

The amounts shown, exclusive of investment funds and interest on funds, will all ultimately be distributed to power system operating expenses.

	In Millions				
			1987 Estimate		
	1985 Actual	1986 Estimate	From	To	Budget Appendix
Power inventories					
Coal	$-145	$-61	$6	$6	$6
Supplies and materials	16	38	9	9	9
Total power inventories	-129	-23	15	15	15
Changes in Other Assets and Other Liabilities					
Development of coal and uranium reserves	98	11	14	14	14
Deferred energy conservation costs	32	34	42	42	42
Cancellation costs for nuclear generating units	35	29	27	27	27
Other	-34	-21	43	43	43
Total changes in other assets and other liabilities	131	53	126	126	126
Investment funds					
Bond retirement fund and interest on funds	155	152	155	155	155

System coal inventory at the end of fiscal year 1985 is expected to be about 9.3 million tons. Current plans include a reduction of about 1.6 million tons in inventory by the end of fiscal year 1986. Inventory levels by the end of 1987 are estimated to be about 7.9 million tons. Reflecting the changes in tonnage and price, the inventory amounts will decline by $61 million in fiscal year 1986 and increase about $6 million in fiscal year 1987.

General storeroom supplies and materials for operation, maintenance, and construction activities are expected to increase $38 million in fiscal year 1986, most of which is for the Watts Bar Nuclear Plant, and $9 million in fiscal year 1987. These supplies and materials include parts for nuclear modification storerooms, substations, steel, poles, boiler tubing, and spare parts for scrubbers, precipitators, pulverizers, turbines, etc., used in the operation and maintenance of the power system.

The *development of coal and uranium reserves* includes exploration, drilling, lease payments, environmental and reclamation activities, planning, property maintenance, and other miscellaneous coal and uranium activities. The costs for these activities are distinct from acquisition of fuel reserves and nuclear fuel acquisition costs discussed elsewhere in the *Budget Program*.

Deferred energy conservation costs for fiscal year 1987 are estimated at $42 million. Some conservation and renewable resource program costs are deferred for a five-year period so as to allocate costs to the period in which benefits to ratepayers are expected to materialize. These deferred charges are amortized monthly to operating expenses at a rate of one-sixtieth of the deferred balance.

About $197 million is provided in fiscal year 1987 for the *bond retirement and decommissioning funds*. The bond retirement fund was established to retire bond debt by the end of the 20th year from the date of cancellation of eight nuclear generating units. The decommissioning fund was established to pay estimated dismantling and removal costs at the end of the life of each of TVA's operating nuclear units.

Payments to the Treasury

Payments to the Treasury for fiscal year 1987 are estimated at $105 million. Through fiscal year 1985 TVA has paid a total of $2.3 billion to the Treasury.

	(In Millions of Dollars) 1987 Budget Appendix
Payments under the 1959 amendment, Section 15d of the TVA Act:	
Return (dividend) on appropriation investment, 1961 through 1987	1,776
Payment of appropriation investment in power facilities, 1961 through 1987	470
Total under provisions of Section 15D of the TVA Act	2,246
Other payments to general fund:	
Repayment of appropriation investment in power facilities, 1946 through 1958 ($185.0 million), and redemption of bonds sold by TVA to the Treasury prior to 1942 ($65.1 million)	250
Total from power proceeds	2,496
Payments from nonpower proceeds, 1946 through 1987	42
Total payments through 1987	2,538

GENERAL SERVICES

General services includes (1) general facilities used in all TVA programs, (2) maintenance of bridges across TVA dams, (3) other expenses, and (4) reimbursable services.

GENERAL SERVICES

Program Financing Schedule

	In Thousands of Dollars		
	1985 Actual	1986 Estimate	1987 Estimate
General facilities			
Financed by:			
Appropriations	1,472	2,278	1,333
Power proceeds and borrowings	23,378	26,744	35,996
Total	24,850	29,022	37,329
Expenses			
Financed by:			
Appropriations	652	1,516	667
Reimbursements	37,702	88,006	95,104
Total	38,354	89,522	95,771

Transportation Facilities and Equipment

	In Thousands of Dollars								
	1985 Actual			1986 Estimate			1987 Estimate		
	Appro.	Power	Total	Appro.	Power	Total	Appro.	Power	Total
Obligations..........................	858	6,995	7,853	785	6,965	7,750	750	6,770	7,520
Less depreciation*..................	-732	-3,414	-4,146	-650	-3,000	-3,650	-650	-3,000	-3,650
Total..........................	126	3,581	3,707	135	3,965	4,100	100	3,770	3,870

*TVA general facilities and equipment are "pooled" and made available to programs and projects on a rental basis. The rental rates include appropriate provision for depreciation; therefore, budget requirements for each program and project include charges for depreciation. Since depreciation is a type of expense not requiring current outlay of funds, the total depreciation charges must be deducted to avoid overstatement of fund requirements.

The 1987 estimate of $7.5 million provides for the replacement of 586 fleet units. This will consist of 333 sedans (218 passenger cars, 100 station wagons, and 15 police cars), 232 trucks, 8 trailers, and 13 construction equipment units. The sedans to be acquired will meet fuel economy requirements in accordance with the Energy Policy and Conservation Act. All of the sedans to be replaced will be high-mileage units meeting or exceeding GSA's 60,000-mile replacement standards. Two hundred and thirty-two trucks will replace comparable trucks which have in excess of 60,000 miles. The trucks range from light van types to large crane and 6x4 stake/winch trucks. The eight trailers will replace boat trailers, van trailers, and cargo and light and heavy machinery hauling trailers whose age and mechanical condition do not justify expensive repairs. Construction equipment--forklifts, tractors, mowers, air compressors, and cranes--will replace types that have served their economic life.

Office Facilities and Equipment

	In Thousands of Dollars								
	1985 Actual			1986 Estimate			1987 Estimate		
	Appro.	Power	Total	Appro.	Power	Total	Appro.	Power	Total
Obligations	1,105	28,557	29,662	820	32,279	33,099	626	42,226	42,852
Less depreciation*	-504	-8,760	-9,264	-450	-9,500	-9,950	-450	-10,000	-10,450
Total	601	19,797	20,398	370	22,779	23,149	176	32,226	32,402

*TVA general facilities and equipment are "pooled" and made available to programs and projects on a rental basis. The rental rates include appropriate provision for depreciation; therefore, budget requirements for each program and project include charges for depreciation. Since depreciation is a type of expense not requiring current outlay of funds, the total depreciation charges must be deducted to avoid overstatement of fund requirements.

The 1987 estimate of $42.9 million for office facilities and equipment is made up of two parts: $26.9 million for office facilities and $16.0 million for electronic computing equipment.

TVA owns approximately 200,000 pieces of office furniture and equipment having an original investment value in excess of $28 million. At least 20 percent of TVA's office furniture and equipment is 20 or more years old and far beyond its normal useful life. In addition to the usual office furniture and equipment requirements, this funding level provides for specialized equipment used for additional building and shop equipment and facilities, such as energy conservation retrofitting and modifications to meet OSHA standards and handicapped code requirements, and replacement of telecommunications systems at Chattanooga and Knoxville, Tennessee. The 1987 estimate of $26.9 million for office facilities will provide the essential office facilities and equipment for the various TVA organizations to carry out their program activities.

The $16.0 million estimate for electronic computing facilities will provide capabilities to meet expanding and new computing applications requirements. In 1986 and 1987 TVA is increasing the utilization of microcomputers within the agency. The microcomputer has become a highly adaptable tool for data storage and manipulation, and word processing. The use of the microcomputer will increase productivity while reducing costly, time-consuming manual activities in such areas as budget and cost control, financial analysis, auditing, and report preparation. Other ADP acquisitions planned in 1987 include mainframe additions to the central-site facilities in Chattanooga, Tennessee. These acquisitions include expanding communications networks, remote terminals and processors, and mass storage requirements.

Other General Facilities and Equipment

	Appropriations (In Thousands of Dollars)		
	1985 Actual	1986 Estimate	1987 Estimate
Obligations	1,561	2,623	1,907
Less depreciation*	-816	-850	-850
Total	745	1,773	1,057

*TVA general facilities and equipment are "pooled" and made available to programs and projects on a rental basis. The rental rates include appropriate provision for depreciation; therefore, budget requirements for each program and project include charges for depreciation. Since depreciation is a type of expense not requiring current outlay of funds, the total depreciation charges must be deducted to avoid overstatement of fund requirements.

Other general facilities and equipment include general-use buildings, construction equipment not assigned to specific projects, and equipment used in carrying out activities for engineering testing, industrial hygiene testing, reproduction and blueprint work, mapping and surveying, and medical support.

General Services Expenses

General services expenses provides for necessary maintenance on five bridges financed by the Department of Transportation and constructed across TVA's Kentucky, Chickamauga, Watts Bar, Fort Loudoun, and Pickwick Landing Dams pursuant to Section 320 of Title 23, United States Code. That section directs that bridges so constructed become a part of the dam structure and that responsibility for maintaining the bridges be assigned to the agency having custody of the dams. The 1987 estimate for these activities is $609,000.

Also included is funding for the preparation and maintenance of emergency fallout shelters in TVA facilities. An estimate of $58,000 is included for these activities in 1987.

Reimbursable services are activities TVA performs at the request and expense of other agencies. Associated expenses, both direct and indirect, are recovered through income received from the agency requesting the service. In 1987 it is estimated TVA will do work for other Federal, State, and local agencies totaling $95,104,000.

IMPACTS OF BUDGET REDUCTIONS ON TVA'S AGENDA FOR THE FUTURE OF THE TENNESSEE VALLEY AND THE NATION

Tennessee Valley Authority
Knoxville, Tennessee
February 1986

MAJORITY MEMBERS
JAMIE L. WHITTEN, MISSISSIPPI, CHAIRMAN
EDWARD P. BOLAND, MASSACHUSETTS
WILLIAM H. NATCHER, KENTUCKY
NEAL SMITH, IOWA
JOSEPH P. ADDABBO, NEW YORK
SIDNEY R. YATES, ILLINOIS
DAVID R. OBEY, WISCONSIN
EDWARD R. ROYBAL, CALIFORNIA
LOUIS STOKES, OHIO
TOM BEVILL, ALABAMA
BILL CHAPPELL, JR., FLORIDA
BILL ALEXANDER, ARKANSAS
JOHN P. MURTHA, PENNSYLVANIA
BOB TRAXLER, MICHIGAN
JOSEPH D. EARLY, MASSACHUSETTS
CHARLES WILSON, TEXAS
LINDY (MRS. HALE) BOGGS, LOUISIANA
NORMAN D. DICKS, WASHINGTON
MATTHEW F. McHUGH, NEW YORK
WILLIAM LEHMAN, FLORIDA
MARTIN OLAV SABO, MINNESOTA
JULIAN C. DIXON, CALIFORNIA
VIC FAZIO, CALIFORNIA
W. G. (BILL) HEFNER, NORTH CAROLINA
LES AuCOIN, OREGON
DANIEL K. AKAKA, HAWAII
WES WATKINS, OKLAHOMA
WILLIAM H. GRAY III, PENNSYLVANIA
BERNARD J. DWYER, NEW JERSEY
BILL BONER, TENNESSEE
STENY H. HOYER, MARYLAND
BOB CARR, MICHIGAN
ROBERT J. MRAZEK, NEW YORK
RICHARD J. DURBIN, ILLINOIS
RONALD D. COLEMAN, TEXAS

Congress of the United States
House of Representatives
Committee on Appropriations
Washington, DC 20515

MINORITY MEMBERS
SILVIO O. CONTE, MASSACHUSETTS
JOSEPH M. McDADE, PENNSYLVANIA
JOHN T. MYERS, INDIANA
CLARENCE E. MILLER, OHIO
LAWRENCE COUGHLIN, PENNSYLVANIA
C.W. BILL YOUNG, FLORIDA
JACK F. KEMP, NEW YORK
RALPH REGULA, OHIO
GEORGE M. O'BRIEN, ILLINOIS
VIRGINIA SMITH, NEBRASKA
ELDON RUDD, ARIZONA
CARL D. PURSELL, MICHIGAN
MICKEY EDWARDS, OKLAHOMA
BOB LIVINGSTON, LOUISIANA
BILL GREEN, NEW YORK
TOM LOEFFLER, TEXAS
JERRY LEWIS, CALIFORNIA
JOHN EDWARD PORTER, ILLINOIS
HAROLD ROGERS, KENTUCKY
JOE SKEEN, NEW MEXICO
FRANK R. WOLF, VIRGINIA
BILL LOWERY, CALIFORNIA

CLERK AND STAFF DIRECTOR
FREDERICK G. MOHRMAN

TELEPHONE
(202) 225-2771

February 6, 1986

Honorable Charles H. Dean, Jr.
Chairman
Tennessee Valley Authority
Knoxville, TN 37902

Dear Mr. Chairman:

The Committee has received your justification document which supports the President's request for fiscal year 1987 appropriations for TVA. While I understand that this document was prepared in accordance with OMB instructions, it is of little practical value to the Committee since many of the programs supported in the past are not discussed.

I therefore request that you provide the Committee, at least 10 days prior to your hearings, a document which describes the request which you made to OMB. This material should include a table comparing the Administration's request for 1987 with spending for the two prior years, as well as a summary which highlights the projects and programs which TVA deems necessary for the efficient conduct of its business but which would be eliminated at the funding level requested by the Administration.

Sincerely,

Jamie Whitten

Chairman

The following material is provided as requested by Chairman Whitten, and highlights the Tennessee Valley Authority's historical mission as well as its future plans as impacted by the President's proposed budget for fiscal year 1987.

Summary of Budget Financed from Appropriations
(Obligations in thousands of dollars)

	1985	1986		1987	
CAPITAL INVESTMENT	Actual	Before G-R-H	After G-R-H	TVA Request	President's Budget
New lock at Pickwick Landing Dam	6,257	709	709	-	-
Columbia Dam and Reservoir	1,347	863	863	-	-
Dam safety modifications	1,203	5,942	5,857	-	-
Additions and improvements	2,454	3,957	3,864	2,610	2,610
Recreation facilities	219	250	240	2,358	1,500
Land Between The Lakes facilities	75	110	106	250	-
Floodplain management facilities	177			95	-
Yellow Creek port	29				
Ammonia from coal	408				
Chemical facilities	7,668	5,391	5,191	5,050	4,400
North Alabama coal-to-methanol project	2,134	1,935	1,935	-	-
General facilities	1,472	2,359	2,278	2,052	1,333
Total capital investment	23,443	21,516	21,043	12,415	9,843
EXPENSES					
NATURAL RESOURCES					
Water resources					
Regional water management	4,376	4,775	4,576	4,400	2,612
Reservoir releases improvements	1,020	1,086	1,041	1,086	
Fisheries resources	584	615	615	615	888
Floodplain management	1,911	1,900	1,821	1,900	-
Bristol water project	5,000	-	-	-	-
Total water resources	12,891	8,376	8,053	8,001	3,500
Reservoir system operations					
Navigation operations	1,369	1,683	1,618	1,625	1,479
Flood hazard analysis	543	500	478	520	350
Multipurpose reservoir operations:					
Water control opreations	2,123	2,293	2,193	2,398	2,398
Reservoir ecology	1,884	2,393	2,289	2,501	2,501
Reservoir lands planning	691	778	740	690	350

(Continued)

Summary of Budget Financed from Appropriations (Continued)
(Obligations in thousands of dollars)

EXPENSES (Continued)	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
NATURAL RESOURCES (Continued)					
Reservoir system operations (continued)					
Multipurpose reservoir operations (continued):					
Dam reservations operation and maintenance..........	2,606	2,697	2,628	2,819	2,819
Reservoir land management.	4,209	4,702	4,457	4,729	1,914
Plant protection and services to visitors.....	3,111	3,237	3,169	3,334	3,334
Dam safety analysis.......	1,319	1,565	1,501	1,629	1,683
Structures and equipment maintenance and improvement..............	3,003	3,843	3,698	3,805	3,765
Subtotal MRO.........	18,946	21,508	20,675	21,905	18,764
Total RSO............	20,858	23,691	22,771	24,050	20,593
Land and forest resources					
Forest resources............	2,513	1,850	1,775	1,850	-
Wildlife resources..........	1,018	915	880	915	550
Recreation resources........	863	935	899	935	-
Environmental/energy education..................	540	600	576	600	-
Total land and forest resources...........	4,934	4,300	4,130	4,300	550
Resource management and development support					
Valley mapping and remote sensing....................	1,084	1,100	1,057	1,100	1,100
Conservation of public lands and waters...........	937	1,000	944	1,000	750
Regional air quality management.................	678	755	728	680	-
Acidic precipitation........	-	400	400	400	400
Waste management............	1,708	1,905	1,841	1,625	-
Total resource management and development support.	4,407	5,160	4,970	4,805	2,250

(Continued)

Summary of Budget Financed from Appropriations (Continued)
(Obligations in thousands of dollars)

EXPENSES (Continued)	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
NATURAL RESOURCES (Continued)					
Land Between The Lakes........	7,308	6,985	6,712	6,900	-
Total natural resources...........	50,398	48,512	46,636	48,056	26,893
ECONOMIC RESOURCES					
Navigation development and engineering assistance.......	1,315	1,150	1,120	1,150	-
Economic projects and demonstrations...............	3,975	5,925	5,685	5,050	-
Minority economic development.	1,265	810	928	810	-
Special opportunities counties and cities...................	5,649	3,000	2,875	3,000	-
Industrial skills development.	3,761	3,420	3,285	2,000	-
Tennessee-Tombigbee Waterway..	1,481	1,200	1,153	1,200	-
Total economic resources...........	17,446	15,505	15,046	13,210	-
COMMUNITY RESOURCES					
Townlift......................	842	-	-	-	-
Community preparedness........	1,253	-	-	-	-
Total community resources....	2,095	-	-	-	-
AGRICULTURAL RESOURCES DEVELOPMENT					
Innovative research.........	2,840	2,220	2,157	1,770	-
Market development..........	1,101	1,000	940	1,000	-
Preserving farmland productivity...............	1,772	1,916	1,834	4,436	-
Total ARD............	5,713	5,136	4,931	4,436	-
NATIONAL FERTILIZER DEVELOPMENT					
Fertilizer R&D...............	14,564	16,900	16,275	19,300	10,430

(Continued)

Summary of Budget Financed from Appropriations (Continued)
(Obligations in thousands of dollars)

		1986		1987	
EXPENSES (Continued)	1985 Actual	Before G-R-H	After G-R-H	TVA Request	President's Budget
NATIONAL FERTILIZER DEVELOPMENT (Continued)					
Fertilizer technology development					
Process research............	4,109	6,900	6,615	6,880)	9,016
Product research............	1,654	3,900	3,739	4,060)	
Experimental fertilizer production................	7,171	1,805	1,731	1,445	1,189
Total fertilizer technology development.........	12,934	12,605	12,085	12,385	10,205
Ammonia from coal.............	6,435	200	200	-	-
Hardwood fuels research.......	4,037	3,400	3,265	3,400	-
Total NFD...........	37,970	33,105	31,825	35,085	20,635
GENERAL SERVICES					
Maintenance of bridges on TVA dams........................	516	721	721	609	609
Integrated regional resource management..................	-	129	129	-	-
Assistance to small disadvantaged businesses.............	100	100	100	-	-
Emergency preparedness........	36	58	58	58	58
Other expenses................	84	537	358	131	-
Total general services...........	736	1,545	1,366	798	667
Total expenses.......	114,358	103,,803	99,804	101,585	48,195
Jobs bill (P.L. No. 98-8).....	-67	81	81	-	-
Other credits................	-280	-	-	-	-
Total appropriations.	137,454	125,400	120,928	114,000	58,038

(Continued)

Summary of Budget Financed from Appropriations (Continued)
(Obligations in thousands of dollars)

FINANCING	1985 Actual	1986 Before G-R-H	1986 After G-R-H	1987 TVA Request	1987 President's Budget
Appropriations	125,000	104,000	104,000	114,000	58,038
Deferred appropriation	-9,000	9,000	9,000	-	-
Unobligated balance brought forward	33,854	12,400	12,400	-	-
Unobligated balance carried forward	-12,400	-	-	-	-
Gramm-Rudman-Hollings reduction (P.L. No. 99-177)	-	-	-4,472	-	-
Total financing	137,454	125,400	120,928	114,000	58,038

IMPACTS OF BUDGET REDUCTIONS ON TVA'S AGENDA FOR THE FUTURE OF THE TENNESSEE VALLEY AND THE NATION

The Tennessee Valley Authority faces severe reductions in its appropriations-financed budget for fiscal year 1987. If Congress concurs with the Administration in these proposed reductions, the Tennessee Valley and the Nation stand to lose a valuable national asset and rich returns on a substantial investment that has paid off handsomely in the past and promises to do so in the future. For each major TVA program area, this report identifies those TVA activities which would be eliminated or reduced under the Administration's budget.

The budget program we submitted to the President would forge a new and more dynamic partnership between the Valley and the Nation. TVA's unique role in this partnership is to serve as a national laboratory for demonstrating and transferring practical, widely applicable solutions to energy, economic, and resource problems. This partnership also renews TVA's commitment to act as an agent of positive change--anticipating and adapting to changes in the economy, technology, the condition of our natural resources, and the roles of our public and private institutions.

At stake in the Administration's budget reductions are the very assets, qualifications, and accomplishments that TVA brings to this partnership:

- A major reservoir system and associated lands.
- The world's premiere fertilizer research and development center.
- Progress on a number of promising initiatives in water quality, fertilizer products and processes, soil erosion, and liquid fuels from hardwoods.
- A formidable assembly of expertise.
- Over fifty years of experience in putting the principles of integrated resource development to work.
- A tradition of highly productive working relationships with other public and private partners.
- Proven success in the creation of permanent, private sector jobs that result in economic growth and the reduction of Federal transfer payments.

As a living laboratory, TVA is prepared to work with all its public and private, regional and National partners to continually reshape a mutual agenda as current problems are solved and new needs arise. But only with the understanding and support of Congress can this joint venture fulfill its promise to the residents of the Valley and the American public.

NATURAL RESOURCES

TVA's natural resources program revolves primarily around the exemplary management and use of the largest operationally integrated system of water and related resources in this country. Closely related is an outreach effort to protect and enhance the Valley's natural resources so as to provide a base for economic development and a quality living environment.

TVA takes seriously its stewardship responsibilities for ensuring that these assets serve the needs of the American public in a way that preserves their long-term environmental quality and their economic utility. In so doing TVA strives not only to maximize the benefits of the system, but to offer a living national model of state-of-the-art, integrated resource management. In its outreach efforts, TVA joins forces with the Valley States, other Federal agencies, and the private sector to attack resource issues such as toxic contamination of surface and groundwater supplies, water quality, acid rain effects, wetland protection, forest management, land reclamation, and environmental education.

However, the drastically reduced funding level proposed for fiscal year 1987 seriously compromises the effectiveness of the broader, more integrated approach TVA has traditionally taken and believes is critical to the future Valley-Nation partnership. TVA believes that emerging problems must be identified and acted on long before they exact costly or irreversible consequences.

This includes the long-term, cost-effective maintenance of TVA's dams and structures as the system ages. But support of continued economic growth and prevention or correction of environmental degradation is equally significant. Consequently, the reductions and eliminations in TVA's natural resource initiatives have both obvious and subtle impacts upon future costs and options for local government and the private sector.

Specifically because the ultimate burden for solving most resource problems lies outside the Federal Government, TVA has focused on innovations and demonstrations as the means that enable its Valley partners to successfully assume their own responsibilities. Moreover, TVA does not isolate its responsibilities in the Valley from its Federal mandate. TVA therefore makes a special effort to apply its limited resources to issues that have wide applicability, significant benefit, and timeliness as recognized by leaders and experts across the Nation and abroad.

Water Resources

In Thousands	
TVA Request	President's Budget
$8,001	$3,500

Regional water management activities will continue, but at reduced levels. These include implementation of water quality management plans on two reservoirs, selected water quality improvement efforts, and monitoring of water quality trends in selected TVA reservoirs. Improvements at TVA facilities and tributary sites will be made to increase minimum flows and dissolved oxygen levels in releases from four dams, along with testing at one other site.

Eliminated

- Applications of innovative remote sensing techniques to identify nonpoint pollution from agricultural operations and septic tanks, and to assess reservoir eutrophication.
- Assessments of the biological effects of water quality in tailwaters, and the impacts of acid rain on water quality and fish deformities in eastern reservoirs.
- Demonstrations of the use of artifical wetlands as low-cost wastewater treatment alternatives for rural areas, control of animal waste runoff from 850 sources in one watershed, and aeration technology to control iron and manganese levels in reservoirs.
- Demonstration of local flood damage control through nonstructural methods on tributaries not regulated by the reservoir system.
- Technical assistance to counties and communities in developing groundwater protection and education plans for principal water supply sources for over 60 percent of the region,s people.
- Technical assistance in planning, management, and use of water supply in drought-prone areas and in groundwater depletion zones.

The elimination of these proposed TVA activities would pose signifiant problems because tributary and groundwater quality directly affects the use and benefits of the reservoir system. TVA's initiatives seek to establish early identification of problems and low-cost control mechanisms. Many of these demonstrations--including improved dissolved oxygen levels, river basin rehabilitation for control of point- and non-point-source water pollution, and the use of artificial wetlands to control domestic and industrial wastes--have already proven to be demonstrations of national importance.

TVA stresses the partnership approach to project work to maximize resources and to transfer capabilities, relying on private business and on local and State government to be the primary implementors of solutions. The integration of TVA skills (remote sensing, land reclamation, air quality management, and others) from across the agency's multiple program areas improves worker effectiveness and targeting of development and demonstrations. This integration is particularly necessary to accomplish the balancing of environmental sensitivity with growth essential for long-term productivity and development.

Although the Administration's budget supports portions of TVA's current initiatives, that support is limited and tentative. Timely and efficient progress in water quality requires sufficient effort to identify problems early and to initiate remedial action at the source of the problem.

Reservoir System Operations

In Thousands	
TVA Request	President's Budget
$24,050	$20,593

The TVA system of 38 multipurpose dams, reservoirs, and associated lands will be managed to provide basic flood control, navigation, and production of hydroelectric power.

Eliminated

- o Funding for all recreation areas not located on dam reservations. This will cause 25 campgrounds, 60 informal use areas, 27 boat ramps, and 12 trails to be closed.

Reduced

- o Long-term maintenance on support facilities, including roads, visitor buildings, and undeveloped lands.
- o Cooperative planning for public and private uses on TVA lands adjacent to TVA reservoirs.
- o Maintenance at major navigation facilities and dam structures.
- o Monitoring the river system for changing consequences of flooding and flood conditions.

In providing the primary benefits of the TVA reservoir system, i.e., flood control, navigation, and power production, TVA must increasingly contend with other public and private expectations and benefits of the same reservoir system. Elimination of the proposed activities impedes TVA's ability to effectively respond to or manage these broader uses and benefits.

Activities TVA had proposed, but which are not funded, would have facilitated expanded use of the reservoir investment, provided a more cost-effective long-term maintenance program, and provided more benefits from TVA lands and waters to State, local, and private sector uses while protecting future benefits and productivity of the system. Without an adequate long-term maintenance program, TVA facilities may require major renovations or replacement far sooner than would normally be expected.

Land and Forest Resources

In Thousands	
TVA Request	President's Budget
$4,300	$550

Operation of 10 dewatering areas adjoining the main reservoir system in the western Tennessee River watershed will be continued.

Eliminated

- o Wildlife and timber management activities on TVA lands and technical support in TVA-State cooperatively managed wildlife areas.
- o Development and demonstration of restoration techniques for Valley wildife species, including the cooperative reintroduction of great egrets, osprey, golden eagles, peregrine falcon, and river otters.
- o Development of a supply-demand model of industry siting impacts on timber resources.
- o Continued availability of integrated forest resource data from State, other Federal, and TVA sources encompassing all Valley region counties.
- o Cooperative efforts with State agencies in forest management planning, and technical assistance to the private sector to facilitate adoption of cost-effective, environmentally sensitive timber harvesting methods.
- o Identification and acquisition of canoe access sites on tributary streams in the upper watershed.
- o Completion of a regional, university-based environmental/energy resource center network supporting local schools with programs to increase environmental understanding through basic skills development activities.

TVA's land and forest activities enable others to assume greater responsibilities in natural resource development or to enhance responsiveness to both environmental and economic interests. TVA's role is to develop and transfer new technology, to identify viable initiatives for independent or joint State, local, and private action, and to turn the concepts of balanced use of the region's resources into practical applications. Activities that have applicability beyond the Valley region are given greatest consideration.

Many of these activities have been of national interest. The Forest Resources Systems Institute recently spun off by TVA, raptor restoration techniques, and the regional university environmental/energy education network are contemporary, nationally recognized models that provide benefits outside the Valley region. These programs have direct relevance to TVA's interest in improving environmental and economic conditions in rural areas of the the Valley and the need to capitalize on opportunities for expanding existing Valley industry and use of the region's natural resource base.

Resource Management and Development Support

In Thousands	
TVA Request	President's Budget
$4,805	$2,250

Mapping services, coordinated with the USGS national mapping program, will continue to produce and revise Valley topographic and metric base maps. Activities also will be continued which ensure that TVA will comply with Federal and State statutes and TVA's own responsibilities for carrying out reviews under Section 26a of the TVA Act. Acid rain research activities will be continued at the level established in coordination with the National Acidic Precipitation Assessment Program (NAPAP).

Eliminated

- All air resource management activities, including a new four-year Valley-wide indoor/outdoor toxic air assessment, technical assistance to regulatory agencies and industry in identifying and resolving air quality problems, and Valley-wide rural ambient air quality monitoring. These monitoring data are the only source in the southeastern U.S. for background levels of regulated pollutants used for research, for regulation, and for economic/industrial development. Three acid rain monitoring stations in the NAPAP National Trend Network will be discontinued.

- Waste management assistance to and demonstrations for local government and industry in waste collection, materials handling and processing, recycling and energy recovery, disposal and systems management. Of particular significance in the Valley region has been this program's work with small industry and farm waste management.

- Programs aimed at reducing hazardous waste generation through public information/education and technical assistance to small-quanity generators of waste to protect both surface and groundwater. Programs established in 1986 with the National Wildlife Federation and technology transfer efforts aimed at hazardous waste professionals would be abandoned.

Reduced

- Consistent with its legal obligations, TVA will reduce the scope of its resource management efforts below the level of its present commitments. For example, activities to identify and protect historic and prehistoric sites on TVA lands will be reduced, increasing the chance for destruction or theft.

The objectives of resource management activities reflect why flexibility is essential for TVA to discharge its responsibilities. Air quality monitoring, acid rain assessment, waste management, remote sensing, and mapping applications are not independent ends themselves. They represent problem areas and technologies that are crucial to the Valley region and the Nation. They are also areas where even greater emphasis is placed on seeking cooperative approaches to solutions with national impact. This attitude has resulted in TVA becoming a national leader in developing cost-effective toxic monitoring technology, a unique supplier of regionwide air quality baseline data, a catalyst in creating a Valley-wide industrial hazardous waste exchange, an innovator in remote sensing applications, and a credible local researcher in acid rain issues.

Land Between the Lakes

In Thousands	
TVA Request	President's Budget
$6,900	-

No funding is provided to continue LBL programs, maintenance, or alternative operations.

Eliminated

- All functions associated with the management of 170,000 acres of Federal land, including highway and facilities maintenance, land and wildlife management, visitor recreation and environmental education programs, hunting, and fishing.

LBL presently receives more than two million visitors annually, focusing on the recreation needs of residents throughout mid-America, and the need of educators and researchers nationwide for an alternative to conventional State, Federal, and private outdoor facilities. Last year, in fact, LBL received visitors from all 50 States and from 20 foreign countries. in size and geographical uniqueness and in its commitment to multipurpose operating principles, LBL stands apart from other facilities attracting research and training with other Federal agencies, universities, and national recreation development institutes.

Activities at LBL reflect this in their diversity--from The Homeplace living history farm to an innovative off-road vehicle use area; from a multiagency tick control research project to the relocation to LBL of Eagle Trust (a nonprofit foundation committed to reintroduction of the American bald eagle); from the implementation of new hunter use fees to demonstration of a "silent" alarm for LBL vehicles to warn approaching deer--and by increasing the diversity and number of sport and observation wildlife, while at the same time increasing the volume of harvested commerical timber and acres returned to farmland.

It has to be recognized that there is little incentive for either of the States in which LBL is located to assume operation of LBL as they both maintain State parks in the vicinity and have no commitments to recreation research or to being a national education and resource management demonstration. If one or more States did agree to operate LBL for only one of its three primary purposes, as is typical of most other large public areas, it would mean the loss of many current benefits and an even greater loss in the goal of increasing multiple uses of other State, local, and Federal lands.

ECONOMIC RESOURCES

In Thousands	
TVA Request	President's Budget
$13,210	-

TVA's economic resources programs maintain and expand permanent private sector jobs and help create new higher paying jobs in the Valley's changing economy. The premise of these efforts has been to build economic self-sufficiency by capitalizing on the region's human and natural resources, thereby reducing the need for Federal transfer payments to the Valley's economically depressed--especially those in rural areas.

In all these programs TVA has worked with others in the private sector and at the local, State, and Federal levels to attack stubborn economic problems and to anticipate needs and opportunities that are emerging as the Nation's economy evolves. TVA strives to find or develop state-of-the-art solutions to Valley issues that at the same time serve as demonstrations to other States and communities across the Nation who are experiencing similar economic development challenges. TVA's assistance is principally of a technical or educational nature and thereby avoids building dependence on direct financial aid from Federal sources.

The Administration's fiscal year 1987 budget would terminate all TVA's economic resource programs.

Eliminated

- Technical assistance to State and local government and industry to expand commercial navigation, create growth in the 50 most economically deprived counties of the Valley region, increase minority business participation, and expand nonmanufacturing service sector job opportunities.

- The existing industries program, which recognizes the importance of already established businesses in producing new, permanent jobs and which has been accepted and emulated by business, utility, and community leaders across the Nation.

- Skills training programs such as the one at Chattanooga State Technical College, with which TVA pioneered new computerized techniques for upgrading worker skills, thus making manufacturing more productive and more competitive in the face of lower cost foreign imports. This program has been replicated outside the Valley, as has another skills initiative to develop basic and advanced industrial skills training programs in schools and industry in collaboration with local communities and the private sector.

- A program initiated in 1986 to create jobs in small rural communities. As a resut of this cooperative effort between the State, community-based organizations, and TVA, approaches tested and demonstrated by the project will be transferred to other areas by the U.S. Department of Agriculture, the

National Association of Development Organizations, and the National Association of Towns and Townships.

AGRICULTURAL RESOURCES DEVELOPMENT

In Thousands	
TVA Request	President's Budget
$4,436	-

The Tennessee Valley is predominately rural, and farming is a way of life for many of the region's residents. The Valley's farmers face a number of challenges, some brought on by changes in the economy, others by changes in technology. TVA has been a partner with these farmers, the region's land-grant universities, and other State and local organizations to help keep farming a viable enterprise, a continued source of employment, and a solid contributor to the Valley and the national economy. At the same time, TVA has been anxious to share new approaches to resource and economic problems that farmers across the Nation experience.

Under the Administration's budget proposal for fiscal year 1987, this program is terminated.

Eliminated

- Cooperative work on several critical and interrelated problems, such as market development, farm manaegement, new enterprises, and soil erosion. Withdrawal of TVA technical and financial resources would strike a serious blow to this work, our partners, the farmers' future livelihood, and the farmers around the country who could also benefit from techniques demonstrated in the Valley.

To be a viable part of the economy, the region's economically depressed small farmers need to improve the efficiency of their operations and at the same time adopt new income-generating enterprises. Elimination of the program to develop and introduce innovations here would foreclose an opportunity to boost agricultural productivity and to stimulate adoption of these innovations in other regions of the country where farmers face similar problems adjusting to changing economic conditions.

Also lost would be an important adjunct to improved operations and nontraditional enterprises--improved marketing systems and opportunities that would help farmers compete more effectively in the marketplace.

Another significant loss, both to the Valley and to the Nation, would be our cooperative soil erosion control and water quality improvement programs. The loss of valuable topsoil and resulting water pollution has been a high economic and environmental priority, and considerable progress has been made in saving soil and improving water quality. Moreover, the Land and Water 201 program is recognized as a highly effective model of innovative multiagency cooperation. Loss of TVA as a valuable partner would be felt not only in the Tennessee Valley but in the Nation's soil and water conservation programs as well.

NATIONAL FERTILIZER DEVELOPMENT

TVA is the world's undisputed leader in fertilizer research and development. In the past half-century, TVA has been responsible for 75 percent of the fertilizer technology used today. With fertilizer accounting for at least 40 percent of agricultural production, the U.S. has been able to grow an abundance of food and fiber for its own people as well as for export. TVA's National Fertilizer Development Center is the centerpiece of a highly successful Federal-State-private sector partnership that combines research, development, and commercialization of affordable, effective, energy-efficient, and environmentally sound fertilizer processes and products.

The program is geared to adapt to change--whether in the economy, resource availability, or public policy--and to accelerate positive change in industry and farming practices. Accordingly, TVA's research program will continue to develop efficient techniques to recover and process lower grade indigenous phosphate ores. It will make production of both conventional and new fertilizer materials more energy efficient, less polluting, and economically viable. Another research priority is to ensure that fertilizers are compatible with diverse agronomic needs and farming practices. TVA will also continue research on improving efficient crop use of fertilizer nutrients, especially costly to produce nitrogen. Finally, to promote and accelerate the transfer of research results, TVA will continue its longstanding and productive working relationship with industry firms to test the agronomic and engineering qualities of experimental products and to produce sufficient amounts of the new products to create and evaluate market acceptance.

It is important to note that TVA's program also reflects responsiveness to the recommendations of the President's Private Sector Survey on Cost Control. TVA is making every effort to identify the kinds of services which private industry would be willing to pay for and to seek joint ventures with private firms for final development of certain technologies. A prime example is a cooperative project with the Florida Institute of Phosphate Research and the W. R. Grace & Company, whereby a portable process unit will be constructed and used to demonstrate new TVA technologies for recovering lower grade phosphate.

The Administration's budget for fiscal year 1987 supports to some extent these directions in the national fertilizer development program, but imposes a number of constraints and setbacks in moving new products and processes quickly into use. Ironically, the cutbacks make it difficult to secure the very cost-sharing arrangements which the Administration favors and which, in turn, would bring in revenues that would speed promising research initiatives to their fruition. The adverse impacts of the Administration cuts would be felt in all facets of NFDC's work.

Research and Development

In Thousands	
TVA Request	President's Budget
$19,300	$10,430

The Administration's budget provides reduced levels of funding for research on nutrient efficiency, fertilizer raw materials, basic fluid and granular fertilizers, and the implications for fertilizers of changing agricultural practices.

Eliminated

o Waste recovery. A variety of industrial wastes may be used directly or processed for use as fertilizers or soil amendments, thereby providing an economical waste disposal system. However, research is urgently needed to determine both the agronomic benefits and potential hazards to the food chain of using these materials in agriculture.

o Organic fertilization for production of fish and shrimp. Development of production systems for fish (tilapia) and freshwater shrimp in farm ponds fertilized with organic wastes (e.g., animal manures) offers both a solution to onfarm waste management problems and an added source of income to troubled farmers.

Reduced

o Fertilizer development for use with reduced tillage agriculture. Although USDA and others are active in developing reduced tillage systems, they do not develop fertilizer materials and application techniques to these systems. Conventional fertilizers and application techniques often do not fit reduced tillage.

o Fertilizer development for irrigation. Research on applying fertilizers with irrigation water (fertigation) is urgently needed because conventional fertilizers often clog irrigation systems.

o Environmental impacts of agricultural practices. Research is desperately needed to develop fertilizers which reduce soil erosion and nutrient runoff, and promote percolation into surface and ground waters.

o Work to enhance the use of domestic phosphate supplies, to improve the efficient use of plant nutrients (especially nitrogen) by crops, and to find a substitute for formaldehyde as an anticaking agent for urea production.

o Phosphate research. Now that the Nation's high-grade phosphate ore deposits have almost been exhausted, new cost- and energy-efficient ways to recover phosphate from low-grade native ore are essential if U.S. fertilizer producers are to maintain independence from costly imported supplies. TVA research on ore beneficiation technologies and on the related hemihydrate technology for producing concentrated phosphoric acid is promising, but it requires a greater level of sustained support for further testing and eventual adoption.

o Nitrogren efficiency research. Millions of dollars worth of nitrogen fertilizer are applied each year in the United States but never used by crops; much of it is lost or transformed into forms the plants cannot use. As a result, yields suffer, the potential for groundwater contamination increases, and large, costly amounts of natural gas used to produce nitrogen fertilizers are wasted. The Administration's proposed funding level would restrict work on nitrification inhibitors, urease inhibitors, and acidic fertilizers to laboratory and greenhouse studies. Vital field verification of these promising solutions to nitrogen loss would not be done or would be done below minimum acceptable levels.

Technology Development

In Thousands	
TVA Request	President's Budget
$12,385	$10,205

The 1987 budget would scale back the product and process testing that is essential to completing the development of improved technologies and moving them quickly into commercial production and farm use.

Reduced

- Industry testing of a new TVA-developed curtain granulation process which not only produces more effective nitrogen fertilizer pellets, but is also much more energy efficient than existing manufacturing techniques.
- Field evaluations of new products, such as newly developed nitrogen-efficient fertilizers.
- Production of experimental fertilizers, especially the energy-efficient phosphate products. Reductions and eliminations here would cut out a significant number of manufacturers, distributors, and dealers who cooperate with TVA in using new technologies to promote market acceptance of these experimental fertilizers among farmers across the Nation.

Hardwood Fuels Research

In Thousands	
TVA Request	President's Budget
$3,400	-

Termination of funding for hardwood fuels research would be a significant setback for both the Valley and the Nation. With zero funding, the research and development momentum established in recent years would be lost and a two-ton-per-day experimental unit abandoned before taxpayers received any tangible return on their investment.

The technology for converting hardwood biomass to ethanol is approaching commercial viability. Not only does this technology offer an energy alternative that would free the U.S. from almost complete dependence on imported oil supplies and could possibly serve as a deterrent to an oil embargo. It would also make economic use of a plentiful renewable resource found in the Valley and other parts of the country, creating as a result a number of jobs in both the forest and the agricultural industries.

WITNESSES

	Page
Bond, B.J	957
Broadbent, Robert	145
Collins, Gov. M.L	1
Dean, C.H., Jr	957
Durall, J.R	957
Duvall, C.D	145
Edwards, L.H	957
Hodel, D.P	145
Klostermeyer, W.C	145
Lewis, B.J	1
Meuser, D.E	1
Moravitz, F.E	1
Pizzano, W.A	1
Sanger, H.S., Jr	957
Shields, J.T	957
Steffy, R.C., Jr	957
Stewart, J.G	957
Thach, Elizabeth	957
Waters, J.B	957
Willis, W.F	957

INDEX

Appalachian Regional Commission

Page

ARC staff requirements ... 60
Budget submission ... 92
Committee view ... 15
Governor's priorities ... 61
Health program ... 60
Highway program ... 32
Prepared statement of:
    Martha Layne Collins ... 74
    Winifred A. Pizzano ... 70
    George Wallace ... 87
Program overview ... 27
Rescission proposed ... 31
Resolution ... 7

Bureau of Reclamation

Administration of the Loan Program ... 927
Administrative Provisions ... 955
Advance Planning Summary ... 332
Ainsworth Unit, P-SMBP ... 266
Ak-Chin Farms Project—Phase 2 ... 921
Alamagordo Water Supply ... 333
All-American Canal Relocation ... 334, 429
American River Flows ... 206
Amity Mutual Irrigation Company ... 921
Animas-LaPlata Project Cost Sharing ... 162, 195, 199
Animas-LaPlata Project ... 161, 217, 762
Appropriation Ceiling ... 261
Arbuckle Project ... 241
Arizona Groundwater Projects ... 166
Atmospheric Water Resources Management Program ... 260, 465
Auburn Dam ... 202
Auburn-Folsom South Unit, CVP ... 212, 563
Bedias Project ... 335
Belle Fourche Unit, P-SMBP ... 682
Big Sandy River Unit, CRWQIP ... 345, 432
Blue Holes Reservoir ... 337
Boise Area Projects ... 898

Bonneville Unit, Central Utah Project 791, 913
Boulder Canyon Project 169, 520, 894, 911, 948
Brantley Project 642, 900
Budget Authority and Outlays 297
Buffalo Bill Dam Modification 160, 728
Bureau of Reclamation 147
Bureau's Role in the Delta 207, 218
Cachuma Project 894
Capital and Operating Expenses 295
Carlsbad Project 900
Central Arizona Project 164, 305, 833, 912
Central South Dakota Water Supply System (CENDAK) 338, 435
Central Utah Project 249
Central Valley Fish and Wildlife Management Study 254, 339
Central Valley Project, Cross Delta Investigation 256
Central Valley Project 543, 895
Chickasaw National Park, Veterans Lake Project 231
Collbran Project 896
Colorado Coastal Plains Project 439
Colorado River Basin Salinity Control Act 198
Colorado River Bridge Crossing 512
Colorado River Dam Fund, Boulder Canyon Project 948
Colorado River Water Quality Improvement Program 255, 343
Colorao-Big Thompson Powerplant 255, 341, 897
Columbia Basin Project, Third Powerplant 717
Columbia Basin Project 265, 705, 903
Colusa County Water District 921
Commissioner Duvall's Statement 153
Computer Aided Design and Drafting System (CADDS) 299
Construction Cost Increases (Loan Program) 927
Construction Program 147
Consumptive Use Studies, CRSP 915
Coordinated Operating Agreement 207, 219
Cost Ceilings of Construction Projects 170
Cost Sharing 184, 192, 247, 254
Crooked River Project 902
Cross Delta Investigation 361
Dallas Creek Project 771
Dam Safety Work 163
Deep Carbonate Aquifer Project 256, 363
Delta Lake Irrigation District (Supplemental) 922
Delta Support Studies 365
Department of the Interior Budget Request 146
Deschutes River Basin Water Salvage Project 367
Dirty Devil River Unit, CRWQIP 346, 442
Dolores Project 779
Drainage and Minor Construction 736, 819
East Bench Gravity Company 922
East Central Oklahoma Water Supply Study 236, 368
Eastern Municipal Water District 922
Elsinore Valley Irrigation District 923
Emergency Funds, CRSP 915
Emergency Fund 270
Employment Levels 295

Page
Environmental and Interagency Coordination Activities ... 370
Examination of Existing Structures ... 907, 915
Explanation of Changes in Language, FY 1987 ... 949
Explanation of Differences Between the President's Budget and the Budget Justifications ... 477, 862, 918, 932, 945
Fiscal Year 1987 Budget Request ... 300
Flaming Gorge (CRSP), Power Peaking Capacity ... 256, 371
Flood Management at Folsom Dam ... 204
Folsom Experience ... 216
Foreign Activities in the Bureau ... 227, 242
Fryingpan-Arkansas Project ... 897
Gallup-Navajo Indian Water Supply Project ... 257, 372
Garrison Diversion Unit—Status-Work Plans ... 198
Garrison Diversion Unit, P–SMBP ... 302, 651
General Administrative Expenses ... 270
General Planning Studies ... 373
General Statement, Construction Program ... 483
General Statement, Emergency Fund ... 933
General Statement, General Administrative Expenses ... 935
General Statement, General Investigations Program ... 326
General Statement, Loan Program ... 919
General Statement, Operation and Maintenance ... 868
General Statement, Permanent Appropriations ... 947
General Statement, Working Capital Fund ... 946
Grace Commission Recommendations ... 276
Gramm-Rudman-Hollings Impacts ... 146, 276, 329, 504, 891, 920
Grand Valley Unit Laterals ... 264
Grand Valley Unit, CRBSCP, Title II ... 598, 897
Grass Valley Creek Debris Dam ... 222
Greater Wenatchee Irrigation District ... 924
Groundwater Recharge Demonstration Program ... 176, 257, 260, 374
Headgate Rock Hydroelectric Project ... 160, 527
Hidalgo County Irrigation District No. 1 (Supplemental) ... 923
Hidalgo County Irrigation District No. 2 ... 923
High Mountain Aquifer Study ... 257, 375
Hungry Horse Project ... 899
Imperial Irrigation District Canal Lining and System Improvement ... 258, 376
Initial Units, CRBSCP ... 914
Investigations of Existing Projects ... 258, 378
Irrigation Drainage Activities ... 148
Itemization of Estimates ... 476, 859, 917, 931, 934, 944
Jean Lafitte National Park ... 190
Jensen Unit, CUP ... 267, 913
Jetty Project at Oregon Inlet ... 306
Kansas River Area, P–SMBP ... 904
Kansas River Basin Water Operations Study ... 379
Kellogg Unit Reformulation, CVP ... 380
Kesterson Reservoir Cleanup ... 305
Kesterson Reservoir ... 262
Kiamichi Hydropower Study ... 236, 381
Klamath Project ... 896
Lake Andes-Wagner Unit, P–SMBP ... 444
Land Resources Management ... 908, 915
Las Vegas Wash, CRBSCP, Title II ... 265, 635

Page
Loan Program ... 147, 270
Loup River Basin ... 382
Lower Colorado Water Supply Project ... 448
Lower Gunnison Basin Unit, CRWQIP ... 348, 451
Lower Virgin River, CRWQIP ... 349
Mancos Project ... 897
McGee Creek Project ... 199, 239, 674, 902
Mesa-Delta M&I Ground Water Study ... 258, 383
Method of Financing Table, Construction Program ... 502
Middle Creek Dam Rehabilitation Project ... 926
Middle Rio Grande Project ... 901
Milk River Project ... 900
Milk River Water Supply, P-SMBP ... 385
Minidoka Area Projects ... 899
Minor Work in Connection With Completed Project Investigations ... 387
Miscellaneous Flood Control Operations ... 907, 912
Mrs. Boggs' Remarks ... 186
Mr. Fazio's Remarks ... 200
Mr. Whitten's Remarks ... 169
Multi-Purpose Projects ... 228
Navajo Unit, Navajo Dam ... 913
Negotiation/Administration of Water Marketing Contracts ... 907
New Advance Planning Studies ... 253
New Construction Starts ... 159, 249
New General Investigations Studies ... 251
1985 New Starts Status ... 160
North Loup Division, P-SMBP ... 175, 620
North Platte Area, P-SMBP ... 905
North Platte River Hydroelectric Power Study ... 389
North Side Extension, Minidoka Project ... 259, 386, 454
Northern Douglas County Cooperative Study ... 388
Northwest Oklahoma Water Supply Study ... 237, 390
Oakdale Irrigation District ... 924
Oakley Fan Groundwater and Recharge Investigation ... 392
OCS Leasing Negotiations ... 186, 307
Offstream Storage ... 394
Oklahoma Water Project Studies ... 229
Operation and Maintenance ... 148, 268
Orland Project ... 895
Oroville-Tonasket Unit, Chief Joseph Dam Project ... 265, 697
Other Appropriations ... 148
Other Project Investigations, CRWQIP ... 350
O'Neill Unit, P-SMBP—Legislation ... 264
O'Neill Unit, P-SMBP ... 175, 629
Palo Verde Irrigation District Unit, CRWQIP ... 351
Paradox Valley Unit, CRBSCP, Title II ... 605
Parker-Davis Project ... 893
Pecos River Basin Water Salvage ... 901
Pima County-Santa Cruz River Ground Water Project ... 259, 396
Planning and Construction Involving Different Agencies ... 228
Planning (General Investigations Program) ... 148
Platte River Water Use Options ... 398
Pojoaque Valley Conjunctive Ground Water/Surface Water Management Study ... 399

Page

Prairie Bend Unit, P-SMBP 175, 400
Price-San Rafael Rivers Unit 352
Privatization 200
Program Coordination and Support, CRWQIP 353
Program Highlight Statement 308
Program Related Engineering and Scientific Studies 470
Projects Approaching Authorized Ceilings 173
Provo River Project 903
Quality of Water Studies, CRSP 916
Rainbow Municipal Water District 924
Rancho-California Water District 925
Reclamation Reform Program 907
Recreational and Fish and Wildlife Activities 267, 825
Refuge Water Supplies 402
Regionalization 224
Rehabilitation and Betterment 743
Repayment Investment Tables 508
Revenues 272
Rio Grande Project 901
Rogue River Basin, Talent Division 902
Safety of Dams Program 267, 746
Saline Water Use and Disposal Opportunities, CRWQIP 354
Saline Water Use Cooling System Verification, CRWQIP 355
Salt River Safety of Dams 167, 266
San Benito Water Conservation and Flood Control 925
San Bernardino County Project 926
San Bernardino Valley Ground Water Project 404
San Felipe Division, CVP 263, 571
San Jacinto Project 406
San Joaquin Valley Conveyance, CVP 408
San Juan River Unit, CRWQIP 357
San Juan-Chama 913
San Luis Unit, CVP 223, 551
San Luis Valley Project, Closed Basin Division 613, 898
San Luis Valley Project, Conejos Division 898
Santa Ana Watershed Project Authority 925
Santa Margarita Project 410
Secretary Hodel's Statement 146
Section 8(g) 187, 307
Seedskadee Project 268, 914
Seminoe Dam Modification 259, 411
Shoreline at Veterans Lake 248
Soil and moisture Conservation 909
Solano Project 896
South Dakota Water Delivery Study 412
South Platte River Operations Study 415
Southeast Oklahoma Water Supply and Distribution Study 238, 414
Spring Canyon Pumped Storage Project 416
Spring Creek Toxicity Program 262, 516
Status of Central Arizona Project 168
Summary of Activities, General Administrative Expenses 941
Summary of Activities, General Investigations 331
Summary of Construction Program 497
Summary of Operation and Maintenance Program 869

Page
Summary of Preconstruction Activity 511, 755
Support Division, CRWQIP 358
Taos Community Ditch Study 418
Technical Assistance to States 247, 419
Technology Transfer 247
Texas Big Sandy Project 420
Title I Division, Colorado River Basin Salinity Control 262, 534
Trinity River Restoration Program, CVP 264, 578
Tualatin Project 903
Uinta Basin Unit, CRWQIP 359
Uinta Unit, Central Utah Project 757
Umatilla Basin Project 421, 458, 903
United Water Conservation District 926
Upalco Unit, Central Utah Project 811
Upper Missouri Area, P-SMBP 905
Upper Snake River Basin Storage Optimization 422
Up-Front Funding for Water Projects 163, 169
Wasatch Front Total Water Management 423
Washita Basin Project 902
Washoe Project 900
Water Management and Conservation Program 907
WEB Rural Water Development Project 689
Westlands Litigation 304
Westlands Water District 208, 220, 250
Westside Irrigation Project 426
Women and Minorities 191
Working Capital Fund 271
Yakima Fish Passage and Protective Facilities 266, 721
Yakima Project 904
Yakima River Basin Water Enhancement Project 427, 462
Yuma Area Projects 894

Tennessee Valley Authority

Budget Request, discussion of 1041
Budget cut 1052
Buy American 1021
Capital investment 1137
Charts, explanation of and copies 962
Consolidated financial statement 967
Economic development 1058
Energy demand charges (DOE contracts) 1149
FY 1987 budget request 1156
Inspector General 1023
Job loss 977
Land Between The Lakes 1103
National fertilizer development 1112
Natural resources 1117
Nuclear power program 1011
Power rates 1006, 1147
Program overview 1005
Summary of review 1102

○